Initial Environment Examination

Project Number: 40648-034
October 2016

IND: Infrastructure Development Investment Program for Tourism - Tranche 3

Sub Project : State-level art and craft resource centres (Package no. PB/IDIPT/T3/02/17)

Submitted by

Program Management Unit, Punjab Heritage and Tourism Board, Chandigarh

Asian Development Bank

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Punjab Heritage and Tourism Promotion Board
Infrastructure Development Investment Programme for Tourism (IDIPT)
ADB Assisted Project)
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The Country Director,
India Resident Mission
Asian Development Bank,
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Date: 06/9/2016

Project: Loan 3223-IND: Infrastructure Development Investment Programme for Tourism (IDIPT), Punjab (Package no: PB/IDIPT/T3/02/17): State-level art and craft resource centres

Subject: Submission of Initial Environmental Examination (IEE) Report

The Initial Environmental Examination (IEE) Report for the contract Package PB/IDIPT/13/02/17 seeking ADB's concurrence is hereby enclosed with this letter for your approval.

Project Director

CC:

1. PA to PD, IDIPT-PB
2. CGM, PHTPB
3. FCS,IDIPT-PB
4. TE, PMC, IDIPT-PB
5. TE DSC, IDIPT-PB
6. ESS, IDIPT-PB

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Initial Environmental Examination

Project Number: 40648-023
ADB loan Number: 3223-IND
October 2016

Infrastructure Development Investment Program for Tourism (IDIPT) - Punjab

Subproject – State-Level Art and Craft Resource Centres at Chandigarh and Sangrur Kothi

(Package no: PB/IDIPT/T3/02/17)

Prepared by the Government of Punjab

ABBREVIATIONS

ADB	–	Asian Development Bank
CTE	–	Consent to Establishment
CTO	–	Consent to Operation
DSC	–	Design and Supervision Consultants
EA	–	Executing Agency
EAC	–	Expert Appraisal Committee
EARF	–	Environmental Assessment Review Framework
EIA	–	Environmental Impact Assessment
EMP	–	Environmental Management Plan
GoI	–	Government of India
GoP	–	Government of Punjab
GRC	–	Grievance Redress Committee
IDIPT	–	Infrastructure Development Investment Program for Tourism
IEE	–	Initial Environmental Examination
MC	–	Municipal Council
MOEF&CC	–	Ministry of Environment, Forest and Climate Change
NGO	–	Non-Governmental Organization
O&M	–	Operations and Management
PHTPB	–	Punjab Heritage and Tourism Promotion Board
PPCB	–	Punjab Pollution Control Board
PUC	–	Pollution Under Control
PIU	–	Project Implementation Unit
PM	–	Particulate Matter
PMC	–	Project Management Consultants
PMU	–	Project Management Unit
REA	–	Rapid Environmental Assessment
SEAC	–	State Expert Appraisal Committee
SLEC	–	State Level Empowered Committee
SPM	–	Suspended Particulate Matter
SPS	–	Safeguards Policy Statement
SPS	–	Safeguards Policy Statement
TMP	–	Traffic Management Plan
TDS	–	Total Dissolved Solids
TSS	–	Total Suspended Solids
UNWTO	–	United Nations World Tourism Organization

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EXECTUVE SUMMARY

1. **Background:** The Infrastructure Development Investment Program (IDIPT) for Tourism Financing Facility (the Facility) will develop and improve basic urban infrastructure and services in the States of Punjab. The IDIPT focuses on:

(i) Strengthening connectivity to and among key tourist destinations;
(ii) Improving basic urban infrastructure and services, such as water supply, road and public transport, solid waste management and environmental improvement at existing and emerging tourist destinations to ensure urban amenities and safety for the visitors and to protect nature and culture-based attractions; and
(iii) Physical infrastructure investments will be accompanied by capacity building programs for concerned sector agencies and local communities for better management of the tourist destinations and for more active participation in the tourism-related economic activities, respectively.

2. This subproject is a part of the eastern circuit tourism development. The eastern corridor connects the main pilgrimage, historic and natural tourism assets located in the eastern part of the state namely Patiala, Fatehgarh Sahib, Chandigarh, Rajpura, Rupnagar, Ghanouli, Kiratpur and Nangal.

3. The aim of this subproject is to enhance urban environment of tourist destinations with support facilities at strategic locations for community involvement (including women empowerment) and craft development for sustainable tourism development. The subproject will support the development and increase of local employment opportunities and women participation. The locations identified for development of craft outlets are Archives Bhawan– Sector 38, Chandigarh and Diwan Khana Complex, Sangrur. Provision of craft outlets is a part of larger strategy to offer immense opportunities to local communities to showcase and market the craft. Development of craft retail outlets will become a basis to enhance culture based tourism in the state. It will result in rapid cost efficient growth, and broader cultural economic development.

4. **Implementation arrangements:** The Executing Agency (EA) for the IDIPT is the Department of Tourism (DoT), Punjab. The implementing agency is the Punjab Heritage and Tourism Promotion Board (PHTPB) Punjab. Project Management Unit (PMU) is set up at Chandigarh to coordinate the overall project execution. Project Management Consultant (PMC) at Chandigarh provides assistance to PMU in the project execution. Project Implementation Unit (PIU) is set up at Amritsar and Ropar and it is supported by Design Supervision Consultant (DSC).

5. **Project Categorization:** As per ADB's SPS 2009, the proposed subproject will be classified as ***Category 'B'*** based on the proposed project activities and nature of the impacts associated with this subproject, and accordingly this Initial Environmental Examination (IEE) has been prepared to address the anticipated environmental impacts through appropriate mitigation and management measures to ensure that there are no significant impacts as a result of this subproject.

6. **Subproject Scope:** The major scope of this subproject is:

- Conservation of Kothi, Causeway and Courtyard,
- landscaping,
- Interior works,

- Construction of new toilet blocks (at Sangrur Kothi),
- Services (electrical and lighting, central heating ventilation and air-conditioning (HVAC), security, fire detection and plumbing),
- Illumination of the complex and
- Rainwater harvesting pit at Sangrur Kothi

7. **Description of the Environment:** The subproject areas have four seasons namely (i) Summer or hot season (mid-March to Mid-June) (ii) Rainy season (late-June to mid-September); (iii) Post monsoon autumn/transition season (mid-September to mid-November); and (iv) Winter (mid-November to mid-March). The mean daily maximum & minimum temperatures are about 37°C & 25°C respectively. Both the subproject districts receive a maximum rainfall of 75 to 80%betweenJune to mid-September. Surface water sources in both the districts are very much limited, there are no major channels. With exception to the Particulate Matter (PM_{10}), rest of the key air quality parameters are well within the stipulated CPCB, NAAQ standards. The noise quality has been alarmingly high at Chandigarh in comparison with Sangrur. Both the district has considerable floral and faunal population. However, there are no protected or sensitive environmental areas within or nearby subproject locations.

8. **Environmental Management.** An environmental management plan (EMP) is included as part of this IEE, which includes (i) mitigation measures for environmental impacts that would arise during implementation; (ii) an environmental monitoring program, and the responsible entities for mitigating, monitoring, and reporting; (iii) public consultation and information disclosure; and (iv) grievance redress mechanism. The potential impacts and their significance have already been evaded by providing suitable environmental considerations at the project design stage. The EMP will be included in civil work bidding and contract documents.

9. The concepts that have been considered in reducing the environmental impacts in the subproject design are (i) The subproject locations are selected based on the screening exercises (in order to identify the level of environmental and social impacts) conducted during the inception stage of the subproject; therefore the anticipated impacts during the implementation of the subproject will be minimum. Nevertheless, the concepts that have been considered during the design of the subproject are (i) design and material will be compatible to the local architectural, physical, cultural and landscaping elements; (ii) preference will be given to the use of local material and labour as far as possible; (iii) for the purpose of conservation, local construction material available in the nearby region as far as possible suiting to those in existence will be used; (iv) The paints with low volatile organic compounds (VOC's) shall be used for all painting (interior and exterior) work and (v) ensuring all planning and design interventions and decisions are made in consultation with local communities and reflecting inputs from public consultation.

10. Environmental Management Plan (EMP) has been developed to reduce all negative impacts. EMP will be assured by a program of environmental monitoring which needs to be conducted during the subproject construction. The environmental monitoring program will ensure that all measures are implemented and will determine whether the environment is protected as intended. It will include on and off-site observations, document checks and consultation with workers and beneficiaries.

11. **Consultation, Disclosure and Grievance Redress:** The stakeholder consultations and public consultations were involved in developing the IEE through discussions, the outcome; views expressed have already been incorporated into the IEE and in the planning and development of the subproject. The IEE will be made available at public locations and will be disclosed to a wider audience via the ADB and PHTPB websites. The consultation process will be continued and expanded during project implementation to ensure that

stakeholders are fully engaged in the project and have the opportunity to participate in its development and implementation

12. **Monitoring and Reporting:** The PIU and DSC will be responsible for performing environmental monitoring and they will be supervised by the PMU and PMC. The PIU with support from the DSC will submit quarterly and semi-annual monitoring reports to the PMU. The PMU will consolidate the quarterly and semi-annual monitoring reports with assistance from PMC and will send it to ADB. ADB after approval will post the environmental monitoring reports on its website.

13. **Conclusions and Recommendations:** Based on the environmental assessment carried out for this project, it shall be concluded that this project does not have any impact on the environment and social (land acquisition and Resettlement and Rehabilitation) issues. Few construction related impacts are anticipated, however, it will be mitigated through the mitigation measures proposed in this report. Hence, implementation of this project will have a positive impact on the local tourism and locals by way of increased business/ employment opportunities.

I. INTRODUCTION

A. Background

14. The Infrastructure Development Investment Program for Tourism (IDIPT) Financing Facility (the Facility) will develop and improve basic urban infrastructure and services in the four participating states of Himachal Pradesh, Punjab, Uttarakhand and Tamil Nadu to support the tourism sector as a key driver for economic growth. It will focus on:

(i). Strengthening connectivity to and among key tourist destinations;

(ii). Improving basic urban infrastructure and services, such as water supply, road and public transport, solid waste management and environmental improvement, at existing and emerging tourist destinations to ensure urban amenities and safety for the visitors, and protect nature and culture-based attractions; and

(iii). Physical infrastructure investments will be accompanied by capacity building programs for concerned sector agencies and local communities for better management of the tourist destinations and for more active participation in the tourism-related economic activities, respectively.

B. Executing and Implementing Agencies

15. The Executing Agency (EA) for the IDIPT is the Department of Tourism (DoT), Punjab. The implementing agency is the Punjab Heritage and Tourism Promotion Board (PHTPB) Punjab. Project Management Unit (PMU) is set up at Chandigarh to coordinate the overall project execution. Project Management Consultant (PMC) at Chandigarh provides assistance to PMU for the project execution. Project Implementation Unit (PIU) is set up at Amritsar and Ropar and it is supported by Design Supervision Consultant (DSC). The asset owners of the two subprojects (State-Level Art and Craft Resource Centres at Chandigarh and Sangrur Kothi) are Department of Cultural Affairs, Archaeology and Museums, Govt. of Punjab (refer **Annexure – 3** for NoC's).

C. Proposed Subproject

16. The state of Punjab has a rich tradition of arts and crafts. The richness of the land is reflected in its handicraft. The people of Punjab lay much importance on their artistry and the minute details of their work. The artistic creations of Punjab are acclaimed all over the world. The skilled and dexterous artisans of the state produce a variety of handicrafts and even the rural women have a major contribution in the production of these fascinating art works. However, these heritage art forms lack a proper platform for their display and showcase of the talent of the skilled artisans and crafts-men.

17. In order to have betterment for the local artisans(who are involved in the arts and craft), the Department of Tourism (DoT), Government of Punjab (GoP) through Punjab Heritage and Tourism Promotion Board (PHTPB) have taken up a subproject on the "**State-Level Art and Craft Resource Centres at Chandigarh and Sangrur Kothi**" under Tranche – 3 projects. The subproject will focus :

- To enhance the mode of display and sale of the handicrafts
- To provide appropriate outlets for direct interaction and business with the buyers and interested visitors
- To improve the economic condition of the artisans
- Provide opportunity for the visitors to learn about various folk arts and to know about all the cultural crafts of the area

18. Chandigarh and Sangrur are the locations selected to have the art and craft resource centres. The existing buildings located at (i) Archives Bhawan, Department of Tourism,

Sector 38 A in Chandigarh and (ii) Diwan Khana complex in Sangrur are chosen to have the proposed interventions (Refer chapter–II description of the subproject) under this subproject. The proposed interventions are restricted only to conservation work, landscaping and other service works (electrical, fire detection, plumbing and air conditioning).

D. Project Categorisation

19. In accordance with ADB's Safeguard Policy Statement (2009) and in line with the Environment Assessment & Review Framework (EARF), the proposed subproject component will be categorized as 'B". This is due to the reason that the proposed project activity does not have any impact on the existing environmental conditions of the project area. The sub project components do not have any major construction related works.

E. Purpose of the IEE

20. Based on the project categorisation, this subproject mandates preparation of the Initial Environmental Examination (IEE) report including a suitable site specific Environmental Management Plan (EMP), which shall form part of the Bid Document. The IEE has captured the anticipated environmental impacts during the various stages of the construction activities namely pre-construction, during construction and post construction. The IEE also has Environmental Monitoring section to track the implementation of the EMP. In view of the proposed subproject components, it is understood that the proposed project interventions are subjected to conservation work and hence the anticipated construction impacts are very much limited and are of short duration. The REA checklist is attached as **Annexure 1** with this report.

F. Report Structure

21. This report contains eight sections including this introductory section: (i) Introduction, (ii) Description of Project Components, (iii) Description of Environment, (iv) Screening of Potential Environmental Impacts and Mitigation Measures, (v) Institutional Requirements, (vi) Public Consultation and Information Disclosure, (vii) Findings and Recommendations and (viii) Conclusions.

II. DESCRIPTION OF THE SUB PROJECT

A. Existing Condition and Need for the Subproject

(i) Art and Craft Centre at Chandigarh:

22. The Archives Bhawan building functions presently as office building for some Government departments, including Punjab Heritage and Tourism Promotion Board (PHTPB), Infrastructure Development Investment Programme for Tourism (IDIPT), Department of Cultural Affairs, Archaeology, Museums, Department of Tourism and Anandpur Sahib Heritage foundation. The building is in fairly good condition and can be very efficiently used for the art and craft centre that has to be designed in the basement of the building.

Figure 1: Proposed Building for Art and Craft Centre at Chandigarh

23. The building is planned with courtyard in the centre and different wings or corridors with rooms running on all the sides of the courtyard. The entrance is from the Dakshin Marg, which is at the eastern side of the site. At the northern side of the site and near the entrance, there is a parking area. The lobby is located as soon as entering the building complex. From the lobby, a flight of stairs leads to the basement which is proposed for the art and crafts centre.

(ii) Art and Craft Centre at Sangrur Kothi:

24. The art and craft centre is proposed at Diwan Khana complex at Sangrur Kothi. Diwan Khana complex includes Diwan Khana, two Kothi's, causeways and a courtyard Diwan Khana and causeway are placed along the longer side of causeway in south-east and north-west respectively. Two Kothi's are placed, one on each end of the courtyard along the

shorter sides in north-east and south-west directions. The causeway provides connection between Kothi's at the first floor level by linking the terraces.

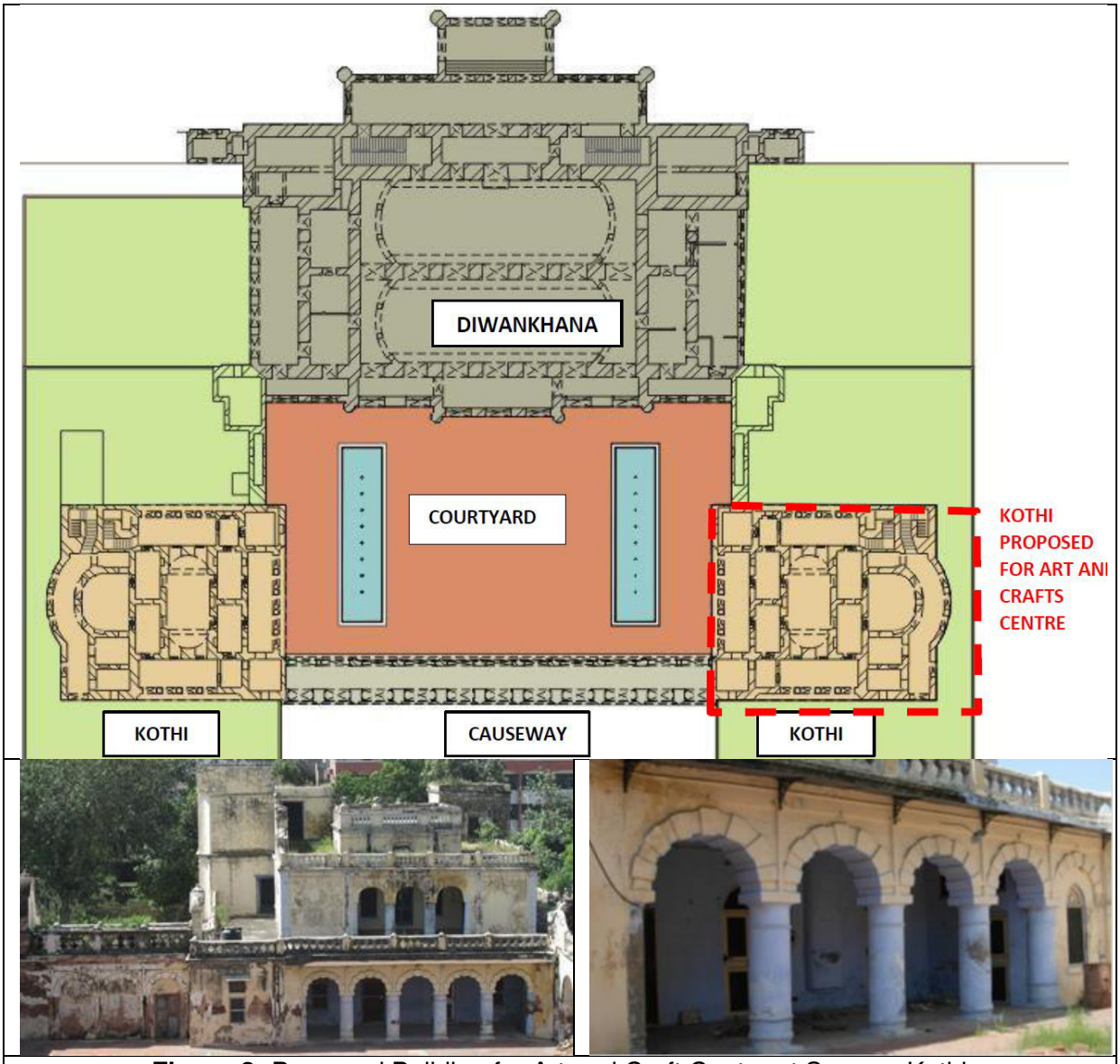

Figure 2: Proposed Building for Art and Craft Centre at Sangrur Kothi

25. As indicated in the **Figure 2**, the marked Kothi will be proposed for conservation and will be used as art and craft resource centre. The Kothi which is opposite (to the proposed conservation Kothi) has already undergone conservation works and the pending work (those including electrical, air conditioning, fire detection etc.) will be taken up under this subproject.

B. Scope of Work

26. The proposed scope of work for the art and craft resource centres at Chandigarh and Sangrur Kothi are given in the **Table 1** and **Table 2**.

Table 1: Scope of Work at Chandigarh

Sl.no	Subproject	Proposed Interventions
1.	Art and Craft Resource Centre at Archives Bhawan, Chandigarh	1. Interior works
		2. Services
		• Electrical and lighting of the proposed area
		• Air conditioning

Sl.no	Subproject	Proposed Interventions
		• Security and safety
		3. Landscaping of the area covered under this subproject
		4. Procurement of traditional art and crafts objects/paintings

Table 2: Scope of Work at Sangrur Kothi

Sl.no	Subproject	Proposed Interventions
1.	Art and Craft Resource Centre at Sangrur Kothi	1. Conservation of Kothi
		2. Conservation of causeway
		3. Conservation of central courtyard
		4. Remaining conservation works of Kothi
		5. Landscape of the complex
		6. Interiors of Kothi for Art and Craft centre
		7. New toilet block for visitors
		8. Services
		• Electrical and lighting
		• Air conditioning
		• Security
		• Fire detection
		• PA system
		• Plumbing
		9. Illumination of the complex
		10. Water harvesting pit
		11. Procurement of traditional art and crafts

C. Implementation Schedule

27. The estimated Implementation Schedule for this subproject is worked out to be 18 months from the date of award of the contract.

III. POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK

A. ADB Policy

28. ADB requires the consideration of environmental issues in all aspects of ADB's operations and the requirements for environmental assessment are described in ADB SPS, 2009. This states that ADB requires environmental assessment of all project loans, program loans, sector loans, sector development program loans, and loans involving financial intermediaries, and private sector loans.

29. **Screening and Categorization.** The nature of the environmental assessment required for a project depends on the significance of its environmental impacts, which are related to the type and location of the project, the sensitivity, scale, nature and magnitude of its potential impacts, and the availability of cost-effective mitigation measures. Projects are screened for their expected environmental impact and are assigned to one of the following four categories:

- **Category A.** Projects could have significant adverse environmental impacts. An EIA is required to address significant impacts.
- **Category B.** Projects could have some adverse environmental impacts, but of lesser degree or significance than those in category A. An IEE is required to determine whether significant environmental impacts warranting an EIA are likely. If an EIA is not needed, the IEE is regarded as the final environmental assessment

report.

- **Category C.** Projects are unlikely to have adverse environmental impacts. No EIA or IEE is required, although environmental implications are reviewed.
- **Category FI.** Projects involve a credit line through a financial intermediary or an equity investment in a financial intermediary. The financial intermediary must apply an environmental management system, unless all projects will result in insignificant impacts**.**

  The proposed subproject State-Level Art and Craft Resource Centres at Chandigarh and Sangrur Kothi falls under Category 'B' as per ADB's Safeguard Policy Statement (2009) and Environment Assessment & Review Framework (EARF)

30. **Environmental Management Plan.** An EMP which addresses the potential impacts and risks identified by the environmental assessment has to be prepared. The level of detail and complexity of the EMP and the priority of the identified measures and actions will be commensurate with the Project's impact and risks.

31. **Public Disclosure.** The IEE will be put up in an accessible place (e.g., local government offices, libraries, community centres, etc.) and a summary translated into Hindi/Punjabi for the project affected people and other stakeholders shall also be disclosed. The following safeguard documents will be put up on ADB's website so that the affected people, other stakeholders and the general public can provide meaningful inputs into the project design and implementation:

- For environmental category A projects, a draft EIA report at least 120 days before Board consideration;
- Final or updated EIA and/or IEE upon receipt; and
- Environmental monitoring reports submitted by the Project Management Unit (PMU) during project implementation upon receipt**.**

B. National and State Laws

32. Implementation of the subproject will be governed by the national and State of Punjab environmental acts, rules, regulations, and standards. These regulations impose restrictions on activities to minimize/mitigate likely impacts on the environment. It is the responsibility of the project executing and implementing agencies to ensure subprojects are consistent with the legal framework, whether national, state or municipal/local. Compliance is required in all stages of the subproject including design, construction, and operation and maintenance.

33. The realm of environmental regulations and mandatory requirements for the proposed sub-project is shown in **Table 3**. The Environmental Impact Assessment (EIA) notification, 2006 by the Ministry of Environment, Forest and Climate Change (MoEF& CC, GoI) specifies the mandatory environmental clearance requirements. Accordingly, projects and activities are broadly categorized in two categories[1] - Category A and Category B,

[1]All projects or activities included as Category 'A' in the Schedule, including expansion and modernization of existing projects or activities and change in product mix, will require prior environmental clearance from the Central Government in the Ministry of Environment ,Forest and Climate Change (MoEF&CC) on the recommendations of an Expert Appraisal Committee (EAC) to be constituted by the Central Government for the purposes of this notification; All projects or activities included as Category 'B' in the Schedule, including expansion and modernization of existing projects or activities as specified in sub paragraph (ii) of paragraph 2, or change in product mix as specified in sub paragraph (iii) of paragraph 2, but excluding those which fulfil the General Conditions (GC) stipulated in the Schedule, *will* require prior environmental clearance from the State/Union territory Environment Impact Assessment Authority (SEIAA). The SEIAA shall base its decision on the recommendations of a State or Union territory level Expert Appraisal Committee (SEAC) as to be constituted for in this notification. In addition, General Condition (GC) of the notification specifies that any project or activity specified in Category 'B' will be treated as Category A, if located in whole or in part within 10 km from the boundary of: (i) Protected Areas notified under the Wild Life Protection) Act, 1972, (ii) Critically Polluted areas as notified by the Central Pollution Control Board from time to time, (iii) Notified Eco-sensitive areas, (iv) inter-State boundaries and international boundaries.

based on the spatial extent of potential impacts and potential impacts on human health and; natural and man-made resources.

Table 3: Environmental Regulatory Compliance

Sub-Project	Applicability of Acts/Guidelines	Compliance Criteria
State-Level Art and Craft Resource Centres at Chandigarh and Sangrur Kothi	The Environment Protection Act, 1986 - under EIA notification, 2006 (and its subsequent amendments in 2009) provides for categorization of projects into category A and B, based on extent of impacts.	The sub-project is not covered in the ambit of the EIA notification as they are not covered either under Category A or Category B of the notification. As a result, of the categorization and the subsequent environmental assessment and clearance requirements, clearances are not triggered either from the State government or the GoI.
	ADB's Safeguard Policy Statement 2009	Categorization of sub-project components into A, B or C and developing the required level of environmental assessment for each component. The subproject has been Categorized as B and accordingly this IEE has been prepared.
	The Wildlife Conservation Act, 1972, amended in 2003 and 2006, provides for protection and management of Protected Areas.	Not applicable. As there are no wildlife protected areas within or in the vicinity of the subproject site.
	The Forest Conservation Act, 1980 and its subsequent amendments necessitate obtaining clearance from the MoEF&CC for diversion of forest land for non-forest purposes.	Not applicable, the subproject site is not located within or in the vicinity of the forest area. Felling of trees are not envisaged in this subproject implementation and hence tree felling/ cutting permission is not required
	Water (Prevention and control of pollution) Act, 1974 and; Air (prevention and control of pollution) Act, 1981	Not applicable. The proposed subproject is a conservation work having very less construction activities and construction materials and hence obtaining CTE and CTO is not envisaged.
	The Ancient Monuments and Archaeological Sites and Remains Act, 1958, and the rules, 1959 provide guidance for carrying out activities, including conservation, construction and reuse in and around the protected monuments.	Not applicable as these sites and monuments are not under the ambit of this Act. NoC from the asset owners (Department of Cultural Affairs, Archaeology and Museums) have been obtained and enclosed in **Annexure 3**.

C. Subproject Environmental Regulatory Compliance

34. The proposed subproject is not covered under any of the project activities that mandate Environmental Clearance (EC) either from Ministry of Environment, Forest and Climate Change (MoEF&CC), Government of India or from the State Government (Government of Punjab). Hence ***Environmental Clearance (EC)*** is exempted for this subproject.

35. In view of other applicable legislations, this subproject does not require clearance/NoC from Punjab Pollution Control Board for Consent to Establish (CTE)/ Consent to Operate (CTO). It does not require ASI clearance, as these buildings (Archives Bhawan at

Chandigarh and Diwan Khana complex at Sangrur Kothi) are not ASI listed monuments. NoC from the asset owners (Department of Cultural Affairs, Archaeology, Museums) have been obtained and enclosed in **Annexure 3**. However, the legal requirements like obtaining Pollution Under Control (PUC's) for the construction vehicles / machineries, labour insurances for all the labourers (including in-house and contract) are mandatory for this subproject

36. As per ADB SPS 2009, based on the proposed project activities and nature of the impacts associated with this subproject, it will be classified as ***Category 'B'*** and accordingly this Initial Environmental Examination (IEE) has been prepared to address the anticipated environmental impacts through adoption of appropriate mitigation and management measures to ensure that there are no significant impacts as a result of this subproject.

IV. DESCRIPTION OF ENVIRONMENT

A. Chandigarh– Environmental Profile

a) Physical Environment

1. Climate

37. The summer and winter exhibits extreme temperature interspersed by monsoon. The mean maximum temperature of the city is 39.1°C (May and June) and the mean minimum is 6.1 °C (January). The highest recorded temperature in Chandigarh was 46.5°C on 20 June, 1964 and the minimum was (-) 1.2°C on 26 January, 1964. The highest relative humidity touches 80% during July – August whereas the lowest relative humidity values of 26% are recorded during April-May. Wind velocity is maximum at 8.4 km/hr during May while it is minimum at 3.2 km/hour during September. The average annual evaporation for Chandigarh is 2110 mm. The lowest monthly evaporation is 7.2 mm during January and highest is 36.3 mm during May.

38. The normal annual rainfall of the U.T. is 1061 mm, which is unevenly distributed over the area in 49 days. The southwest monsoon sets in from last week of June and withdraws during the end of September, it contributes to about 80% of annual rainfall.

2. Geology & Soil

39. Chandigarh is occupied by semi consolidated formations of upper Siwalik system of middle Miocene age that are exposed in north eastern fringe whereas the rest of the Territory is occupied by Indo-Gangetic plain comprising alluvium of Pleistocene age. The piedmont deposits at the foot of Siwalik Hills comprises of cobble, pebble and boulder associated with sand, silt and clay. The piedmont deposits are followed by alluvial plain comprising of clay, silt and sand.

3. Surface water

40. There are no large natural surface water bodies in Chandigarh though small ponds do exist. The area is drained by two seasonal rivulets viz. Sukhna Choe in the east and Patiala-Ki-Rao Choe in the west. The central part forms a surface water divide and has two minor streams. The stream passing through the central part is called N-Choe and the other is Choe Nala which initiates at Sector 29. The Sukhna Choe has been dammed in north-east side of the city, which has given rise to an artificial lake covering an area of about1.62 sq.km. The lake, known as Sukhna has a water holding capacity of five million cubic meters (MCM).The surface water quality analysis performed for the Chandigarh is presented in the following **Table 4.** The outcome of the analysis shows that with exemption to total hardness all other parameters are well within the water quality standards.

Table 4: Surface water quality for Chandigarh

Sl.no	Parameter	**Sampling locations: Sector 22, 35,38, 42, 44, 48 for Surface Water**	**Water quality Standard** (IS 10500 second revision, 2009)
1.	Temperature(°C)	22 - 27	-
2.	pH	6.4 - 6.8	6.5 - 8.5
3.	Total Hardness (mg/L)	250 - 350	200
4.	Alkalinity(mg/L)	500 - 650	200
5.	DO(mg/L)	4 - 7	-
6.	COD(mg/L)	25 - 40	-
7.	Ca(mg/L)	120 - 180	75
8.	Mg(mg/L)	27 - 60	30

Source: Chandigarh Pollution Control Committee

4. Groundwater

41. Ground water in the area occurs under water table, confined as well as semi-confined conditions. The pumping test data (from CGWB) of the aquifers tested in the city clearly indicates that good confined aquifers occur around sector 10,33, 38 and 47 while leaky are encountered around sector 28. Ground water occurs under unconfined conditions down to about 80m in other areas. The depth of the shallow aquifer system is less than 30m below ground level whereas the depth of the deeper aquifer system ranges from 40 to 450 mbgl. The groundwater quality analysis performed for the Chandigarh is presented in the following **Table 5**. The outcome of the analysis shows that with exemption to total hardness all other parameters are well within the water quality standards.

Table 5: Groundwater quality for Chandigarh

Sl.no	Parameter	**Sampling locations: Sector 22, 35,38, 42, 44, 48 for Groundwater**	**Water quality Standard (IS 10500 second revision, 2009)**
1.	Temperature (°C)	20 - 25	-
2.	pH	7.0 - 7.2	6.5 - 8.5
3.	Total Hardness (mg/L)	200 - 350	200
4.	Alkalinity(mg/L)	400 - 500	200
5.	DO(mg/L)	7 - 11.6	-
6.	COD(mg/L)	10 - 15	-
7.	Ca(mg/L)	130 - 220	75
8.	Mg(mg/L)	23 - 40	30

Source: Chandigarh Pollution Control Committee

5. Ambient Air Quality

42. Ambient air quality of Chandigarh is being monitored at 5 stations by Chandigarh Pollution Control Committee. The annual average values of AAQ recorded in Chandigarh is given in **Table 6.**

Table 6: Ambient Air Quality in Chandigarh

Parameters	Sector 17	Industrial area	Punjab Engineering College	Govt. College (IMTECH)	Kaimbala village	NAAQ Standard
$PM_{10}\mu g/m^3$	81	96	77	88	85	100
$SO_2\mu g/m^3$	2	2	2	2	2	80
$NO_2\mu g/m^3$	24	31	24	24	23	80

Source: Chandigarh Pollution Control Committee

43. From the observation it shall be concluded that with exception to Punjab Engineering College, the values of all other monitored stations are nearing the standard limits of PM_{10}.

6. Noise Quality

44. As per the Chandigarh Pollution Control Committee (CPCC), the noise monitoring has been conducted for the following locations in Chandigarh and the recorded values are depicted in the **Table 7**. From the observation it shall be concluded that the recorded noise levels are alarmingly high in comparison with the Noise quality standards for Day time noise levels.

Table 7: Noise Quality in Chandigarh

Sl. no	Location	Year 2010 (Noise levels in in dBA)	Year 2014 (Noise levels in in dBA)	Standard
1.	Shopping Complex, Sector 17	90.0	76.5	Day Time Nosie level for Commercial area is 65dBA
2.	ISBT, Sector 17	98.0	95.2	
3.	Grain market, Sector 26	89.0	82.5	
4.	PGI, Sector 12	86.0	85.2	
5.	P.U., Sector 14	76.0	69.4	
6.	General Hospital sector 16	50.0	79.2	
7.	Scooter Market Sector 21	86.0	70.2	
8.	Furniture market Sector 34	75.0	82.2	
9.	Market, Sector 9D	98.0	95.0	
10.	Market, Sector 7	88.0	-	

Source: Chandigarh Pollution Control Committee

b) Ecological Environment

45. **Flora.** Flora in Chandigarh is mostly social forests planted by Municipal Corporation, Forest Department and other organizations and institutes. A wide variety of trees, herbs, shrubs, grasses and climber plants are found in the natural arenas of Chandigarh. The most prominent flora entities that are found here include: Acacia catechu (Khair), *Acacia Arabica* (Kikar), *Acacia modesta* (Phulai), *Acacia leucophloea* (Raeru), *Anogeis suslatifolia* (Chhal), *Dalbergia sissoo* (Shisham), *Bombax ceiba* (Semal), *Azadirachtaindica* (Neem), B*utea frondosa* (Dhak), *Emblica officinalis* (Amla), *Bauhinia racemosa* (Kachnar), *Morus alba* (Tut), *Diospyrosmontana* (Kendu), *Lanneagrandis* (Jhingan), *Murrayakoenigii* (Kari patta), *Cassia fistula* (Amaltas), *Prosopisjuliflora* (Musket), *Vitexnegundo* (Bana or nirgundi), *Zizyphus jujoba* (Ber), *Carissa spinarum* (Karaunda), *Saccharumsararoxb* (Moonj), *Adhatodavasica* (Vasaka), *Abrusprecatorious* (Rati), *Tinosporacordifolia* (Giloe), etc. There are no endangered floras identified in the project area.

46. **Fauna** The faunal populace in Chandigarh (urban area) is very less. However, considerable faunal population are recorded in the forest areas of Chandigarh U.T like Sukhna Wildlife Sanctuary, Lake Reserve forests, Sukhna choe Reserve forests, Patiala-ki-Rao forests and Forest area at Brick kiln Manimajra. There are no endangered fauna identified in the project area

47. **Protected Areas:** Sukhna Wildlife Sanctuary spreads over an area of 2,600 hectand it is situated at 1 Km from the North-East direction of Sukhna Lake. It forms part of Sukhna lake catchment area subsequently falling in Shivalik hills. The subproject area is 7.5 km (aerial distance) from the Sukhna Wildlife Sanctuary. Important wildlife found in Sukhna Wildlife Sanctuary are

- **Mammals:** The mammals that are found in the Sukhna Wildlife Sanctuary include: Sambar, Pangolin or ant eater, Chittal or spotted deer, jackal, wild boar, small Indian civet, porcupine, jungle cat, rhesus monkey, hanuman langur, Common Mongoose, Indian hare, squirrel, common rat, etc.
- **Birds:** There are over 150 different variety of birds found in the Sukhna Wildlife Sanctuary. It also includes all kinds of aquatic birds. Some major birds found here include: common myna, bee-eater, hill myna, bulbul, jungle crow, tree pie, black drongo, grebes, ducks, swan, geese, hawks, coots, plovers, jacanas, doves, parrots, barn owls, rollers, woodpeckers, barbets, hornbills, hoopoes, swifts, kingfisher, golden oriole, night jars, cuckoos, grey partridge, red jungle fowl and peacock.
- **Reptiles:** Some common varieties of reptiles that are found in the Sukhna Wildlife Sanctuary are the turtle, Russell's viper, Common Krate, Rat Snake, Cobra, Common Monitor lizard (Chandan Goh) and Indian Python.

c) Socio Cultural and Economic Environment

7. Demographic profile

48. As per Census 2011, the population of Chandigarh U.T. has crossed the one million mark with its population placed very close to that of the state of Mizoram (10,91,014). The Union Territory recorded a population of 10,55,450 in 2011 with much lower decadal rate of increase in population with only 1,54,051 people being added to Chandigarh during the last decade. The growth rate of merely 17.10% between 2001-2011 is the slowest since its inception. This is perhaps due to the rapid pace of urbanization taking place in the neighbouring towns of Mohali, Panchkula, Zirakpur, Kalka, Kharar, etc., falling within the 16 km periphery control area. The U.T of Chandigarh has essentially become one territory with the urban settlements of Chandigarh and Manimajra occupying a major part of its 114 sq.km area. As per the census of 2011, 10,26,459 (97.25%) of its population was urban and 28,991 (2.75%) was rural.

- **Population density.** With the latest census data becoming available, the density recorded for the Chandigarh U.T. is now placed at 9258 persons per sq. km in 2011.
- **Literacy rate.** Chandigarh has always recorded a high literacy rate since its inception due to the high quality of educational infrastructure available in the city. As per Census 2011, 8,05,438 persons were literate in the U.T, indicating a literacy rate of 89.99%.
- **Sex ratio.** As per the provisional population figure of 2011, Chandigarh U.T. recorded a population of 10,54,686 out of which 5,80,282 are male whereas remaining 4,74,404 are female. As per Census 2011, compared to the all India figure of 940, Chandigarh has recorded a sex ratio of 818.
- **Employment.** The majority of workers in the U.T. are employed in fields other than cultivation, agriculture, household industry etc. From the census data it is observed that proportion of cultivators, agricultural labourers, household industry workers and other workers (mostly service sector, business and others) to total workers are 0.6%, 0.2%, 1.1% and 98.1% respectively.

B. Sangrur District – Environmental Profile

a) Physical Environment

8. Climate

49. The climate of the Sangrur district is characterized by the dryness of the air and intensely hot summer and cold winter. The year may be divided into four seasons namely (i) Summer or hot season (mid-March to Mid-June) (ii) Rainy season (late-June to mid-

September); (iii) Post monsoon autumn/transition season (mid-September to mid-November); and (iv) Winter (mid-November to mid-March). May and June are the hottest months of the year with the mean daily maximum & minimum temperatures being about 37°C & 25°C respectively. Maximum temperatures can rise up to 44°C. Southwest monsoon with high intensity showers commence in late June.

50. Rainfall occurs during the winter season due to North westerly monsoon. The normal annual rainfall of the district is 558 mm, and about 75% of the rainfall occurs during last week of June to mid Sept. The variation in annual rainfall on a yearly basis is appreciable i.e. 700 mm to 1200 mm.

9. Geology & Soil

51. Sangrur is more or less flat except towards its north western part which is profusely dotted with sand dunes. The elevation of the land in the area varies from 251m in the south western to 236m above mean sea level in NE. The master slope of the area is towards the south west. The soil of the district is loamy sand and sandy loam; kaller land is also spotted at few places. The soil is sandy/brown blown sand clay at the border of Faridkot, Moga district.

10. Surface water

52. Most of the area of the district is without any major water channels. It is drained by only two seasonal streams. River Ghaggar traverses through the southernmost part of the district. Sirhind choe is the other small torrent which constitutes a part of the surface drainage of the district. Apart from these two water channels, some stagnant pools of water, called 'ponds' which are found near the settlements, are distributed over the whole district.

11. Groundwater

53. The district is occupied by Indo-gangetic alluvial plain of Quaternary age and falls in Ghaggar sub-basin. The ground water occurs in alluvial formations comprising of fine to coarse sand which forms the potential aquifers. In the shallow aquifers upto 50m ground water occurs under unconfined /water table conditions where as in deeper aquifers semi confined /confined conditions exists. The depth to water level ranges from 12.25 to 29.60 m during the pre-monsoon period and 13.80 m to 30.15m bgl during post monsoon period. The seasonal fluctuation varies from 1.05 m to 5.32m in the area. The long term fluctuation trend indicates that there is a fall of 0.65m/year. Groundwater samples from Sangrur district have been collected and analysed for various physicochemical parameters and compared with drinking water standard (IS 10500).

Table 8: Groundwater Quality in Sangrur

Sl.no	Parameters	Location					Standard IS 10500
		Harditpura	Bhawanigarh	Phagguwala	Ghabdan	Sangrur	
1	pH	7.86	7.2	7.94	7.42	7.15	6.5 - 8.5
2	Turbidity (NTU)	0.27	0.87	0.19	0.59	0.37	5
3	TDS (PPM)	486	624	390	535	590	500
4	Temperature(°C)	30.8	32.1	30.7	30.8	31	
5	Conductivity s/cm	816	940	686	728	841	
6	Chloride mg/l	20.91	13.82	12.76	16.17	14.18	250

Source: EIA NH- 64 from Patiala to Sangrur (km 50.00 to km 113.00)

54. From the observation it shall be concluded that the TDS concentration that has been recorded is high at Bhawanigarh, Ghabdan and Sangrur. All other key parameters are well within the stipulated standards.

12. Ambient Air Quality

55. As per the site assessment, the subproject area (Sangrur Kothi) is free from major industrial and commercial activities in the surroundings, which leads to good ambient air quality. In order to describe the AAQ of the district, secondary information obtained from the literature/ reports has been utilised in the **Table 9**. The monitoring has been done in the commercial area where the Highway (NH 64) traverses through the urban settlements.

Table 9: Ambient Air Quality in Sangrur

Sl.no	Parameters	Location		NAAQ Standard
		Bhawanigarh	Sangrur	
1	PM_{10} µg/m^3	115.0	124.0	100.0
2	$PM_{2.5}$ µg/m^3	38.0	40.0	60.0
3	SO_2 µg/m^3	17.0	18.0	80.0
4	NO_X µg/m^3	26.0	24.0	80.0

Source: EIA NH- 64 from Patiala to Sangrur (km 50.00 to km 113.00)

56. From the observation it shall be concluded that the Particulate Matter (PM_{10}) is exceeding the standards at both the monitoring stations. Other key parameters are well within the limits. The increase in PM_{10} may be due to wind, commercial activities, vehicle movements and other anthropogenic activities.

13. Noise Quality

57. Secondary information reveals that the ambient noise levels in Sangrur is above the stipulated standard for commercial noise levels (**Table 10**). The monitored locations are similar to the AAQ stations and hence the influence of the highway vehicle shall be the main reason for the increased noise levels.

Table 10: Noise Quality in Sangrur

Sl.no	Parameters	Location		Noise levels Standard for commercial Zone
		Bhawanigarh	Sangrur	
1	Noise levels at Day Time (dB(A))	68.6	76.5	65.0
2	Noise levels at Night Time (dB(A))	57.3	65.2	55.0

Source : EIA NH- 64 from Patiala to Sangrur (km 50.00 to km 113.00)

b) Ecological Environment

58. **Flora** in the Sangrur district is featured by Northern Tropical Dry Mixed Deciduous Forest Type. The Kikar *(Acacia nilotica*) isgrown abundantly throughout the district, whereas ber (*Zizyphus mauritiana Lamk*.) is planted near wells and fields. In certain places mango *(Mangifera indica*) is grown in plenty. The pipal *(Ficus religiosa*.) Barota and neem (*Azadirachta indica)* are planted near villages. Shisham *(Dalberga sissoo*) has been planted along canals and Siras *(Albizia procera or Albizia lebbeck*) are seen along the roadsides. In addition to these fras *(Tamarix aphylla*) is common near villages and it is useful for roofing. There are patches of jungle in certain localities in the district mostly confined to jand *(Prosopis cineraria*), Karir *(Capparis decidus*.) and jal (*Salwadora eleodes*) the Dhak *(Butea monosperma*) is also common in marshy places whereas the khajur-date palm (*Phoenix sylvestris*) is found in sandy areas.There is no endangered flora identified in the project area.

59. **Fauna.** Common mammals found in the Sangrur are hodgson's bat *(Myotis formosus*), *Long-eared* bat *(Plecotus auritus homochrous*, *hodgson)*, northern palm squirrel *Fundumbus pennanti*, crested porcupine (Hystrix cristata*),* Indian rat (*Rattus rattus*), the India gerbille *(tateraindica),* India field mouse *(Mus booduga)*, Indian hare *(Lepus nigricollis)*, Indian fox *(Vulpes bengalensis)*, asiatic jackal (*Canisaurena)*, small India civet (*Viverriculaindica*), common mongoose *(Herpestesedwardsii*), and rhesus macaque *(Macacamulatta*).There are no endangered fauna identified in the project area.

60. The common birds found in the Sangrur district are :*Phalacro coraxniger* (vieillot), *Butorides striatuschloriceps* (Bonaparte), *Ardeolagrayii* (sykes), *Bubulcusibis*coromandus(Boddaert), *Egretta alba modesta* (Gray), *E. garzetta* (Linnaeus), *Anastomusoscitans* (Boddaert), *C. ciconia* (Linnaeus), *C. migra* (Linnacus), *Tadornaferruginea* (pallas), *T tadorna* (Linnaeus), *Nettapus coromandelianus* (Gmelin), *Halia eetusleucoryphus* (Pallas), *Coturnix coromandelica* (Gmelin), *T. stagnatili* (Bechastein), *S. pagodrum* (Gmelin), *Chrysommasinense* (Gmelin).

61. **Bir Aishwan Wildlife Sanctuary** is situated at 3 km from Sangrur city on Sohian Road in District Sangrur. This Sanctuary is spread over 264.40 ha of Government area. The bir area has been declared as wildlife sanctuary under the Preservation of Faunae of Patiala Rules, 1896 vide Patiala and East Punjab State Union Government (PEPSU) notification No. F-150/50 dated 28-2-1952. It harbours wildlife species as indicated in the **Table 11**. The subproject site is 4.5 km (aerial distance) from the wild life sanctuary.

Table 11: Flora and Fauna in Bir Aishwan Wildlife Sanctuary

Important Fauna		Important Flora	
Common name	**Zoological Name**	**Common name**	**Botanical Name**
Blue Bull	*Boselaphustragocamelus*	Arjun	*Terminalia arjuna*
Hare	*Lepus nigricollis*	Beri	*Ziziphus jujube*
Jackal	*Canis aureus*	Jamun	*Syzigiumcumini*
Jungle Cat	*Felischaus*	Karir	*Capparisaphylla*
Rhesus Monkey	*Macacamulatta*	Karonda	*Carissa karanda*
Black Partridge	*Melanoperdixniger*	Khair	*Acacia catechu*
Grey Partridge	*Perdixperdix*	Kikar	*Acacia nilotica*
Peafowl	*Pavocristatus*	Mesquite	*Prosopisjuliflora*
Rose Ringed Parakeet	*Psittaculakrameri*	Mulberry	*Mulberry spp.*
Spotted Owlet	*Athene brama*	Shisham	*Dalbergiasissoo*

Source: Chief Wildlife Warden, Punjab, 2009 (Personal communication)

c) Socio Cultural and Economic Environment

14. Demographic profile

62. According to 2011 Census of India, Sangrur district ranks 7th in Punjab with a population of 16,54,408 which is 6% of the total population 2,77,04,236 (Provisional) of Punjab State. The sex ratio according to the 2011 census is 893 females per thousand male in the district which is slightly higher in comparison with 2001 census, which was 876. Though the rate of population growth is meagre yet the density of population has increased which are 457 per Sq.km as compared to 486 by 2001 census.

- **Literacy.** Sangrur district hold 17th rank in the field of literacy in the state. 68.9% population is literate whereas the rate for male and female literacy is 74.2 % and 62.9% respectively**.**
- **Population density.** As per the census 2011, the population density of Sangrur is 449 people per sq. km.

- **Sex Ratio**. According to the Census 2011, the sex ratio in the Sangrur district was 893 females per 1000 males. Child sex ratio (0-6 years of age) was 835 girls per 1000 boys**.**
- **Employment**. Most of the population of Sangrur is living in rural areas and mainly depends on agriculture and allied works.

V. SCREENING OF POTENTIAL ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

63. The assessment for environmental impacts due to the implementation of the Package no: PB/IDIPT/T3/02/17 " State-Level Art and Craft Resource Centres at Chandigarh and Sangrur Kothi" have been carried out for identifying the potential impacts that might arise during the following stages of the project planning and implementation.

- **Location impacts.** Impacts associated with site selection, including impacts on environment and resettlement or livelihood related impacts on communities
- **Design impacts.** Impacts arising from project design, including the technology used, scale of operations, discharge standards etc
- **Construction impacts.** Impacts resulting from construction activities including site clearance, earthworks, civil works, etc.
- **O&M impacts.** Impacts associated with the operation and maintenance of the infrastructure built in the project.

A. Land Acquisition and Resettlement Impacts

64. The subproject interventions (conservation work) are proposed in the existing buildings located at Archives Bhawan, Chandigarh and Diwan Khana complex, Sangrur. Both the buildings are owned by the Director, Department of Cultural Affairs, Archaeology & Museums, Govt. of Punjab, Chandigarh and hence there are no impacts envisaged on land acquisition or resettlement due to the proposed subproject. NoC from the asset owners (Department of Cultural Affairs, Archaeology and Museums) have been obtained and enclosed in **Annexure 3**.

B. Environmental Impacts

1. Location Impacts

65. The proposed sub project is not likely to have any location specific impacts either on environment or have any resettlement/ livelihood related issues. This is limited due to the nature of the construction works such as Conservation of Kothi, causeway and courtyard, landscaping, Interior works, toilet blocks, services (electrical and lighting, central heating ventilation and air-conditioning (HVAC), security, fire detection and plumbing), Illumination of the complex and Rainwater harvesting pit. Hence, the project does not involve any major construction activities, which will result in movement of construction machineries and equipment that will cause environmental impacts to the construction zone and its surroundings.

2. Design Impacts & Pre Construction Impacts

66. Impacts arising from the inappropriate designs of proposed facilities would be limited to those arising from the inadequate contemporary designs which are provided in order to co-ordinate with the traditional and cultural environment. These have been addressed through careful selection of materials, so as to not adversely impact the aesthetic appeal of the surroundings. The results of interventions are unobtrusive and will be an integral part of the overall ambience so as to avoid impacts on the aesthetics of the site.

3. Construction Impacts

67. There are very few construction related impacts associated with the implementation of the subproject. Here, the construction is limited to only conservation works. The anticipated construction impacts includes:

68. **Noise and Vibration**: It is anticipated that there will be a temporary increase in noise levels during the subproject activity. Noise levels and potential effects due to conservation activities would vary depending on the type of equipment, the location of the equipment, the

duration of operations, and the time of operations. However, no permanent noise impacts are anticipated. Appropriate mitigation measures are detailed in the Chapter 6.

69. **Air quality**: The proposed conservation activity of this subproject will not affect the air quality of the project area. Operation of the project will not involve any emissions of air pollution except for those associated with the heating system (HVAC). The project is not likely to result in an increase in emissions beyond the current use during conservation phase. During conservation works, fugitive dust emissions could be a short term impact. Depending on the wind and conservation conditions, there is a potential for fugitive dust which could result in localized increase in particulate levels and the disturbed area would be quite limited. As a result, air quality impacts would be expected to be minimal. Principal on-site sources of particulates arising from the activities of excavation process, ceiling works, dust arising from storage piles and unpaved areas. For each source type, fugitive emissions would depend on factors such as the properties of emitting surfaces (e.g., soil silt content, moisture content, and volume of spoils) and the construction practices.

70. **Construction Waste**: The Contractor and DSC would take an active role with regard to the reprocessing and recycling of waste generated by the proposed subproject. An evaluation of the potential for recycling would occur before the commencement of the project. Some materials that can be recycled would be segregated from those materials which cannot be recycled to enable disposal at an approved solid waste facility.

4. O & M Impacts

71. Impacts on environmental conditions associated with the operation stage of the subproject components pertain to impacts due to enhanced tourist activities in the Archives Bhawan, Chandigarh and Diwan Khana complex, Sangrur. The impacts pertaining to regulation of tourist movements, planning the extent of facilities and amenities in line with the carrying capacity shall enable addressal of operation stage impacts.

VI. ENVIRONMENTAL MANAGEMENT PLAN

72. The purpose of the environmental management plan (EMP) is to ensure that the activities are undertaken in a responsible, non-detrimental manner with the objectives of: (i) providing a proactive, feasible, and practical working tool to enable the measurement and monitoring of environmental performance on-site; (ii) guiding and controlling the implementation of findings and recommendations of the environmental assessment conducted for the project; (iii) detailing specific actions deemed necessary to assist in mitigating the environmental impact of the project; and (iv) ensuring that safety recommendations are complied with.

73. A copy of the EMP must be kept on work sites at all times. This EMP will be included in the bid documents under appropriate contract clauses and will be further reviewed and updated during implementation. Non-compliance with, or any deviation from, the conditions set out in this document constitutes a failure in compliance.

74. The Contractor will be required to (i) establish an operational system for managing environmental impacts (ii) carry out all of the monitoring and mitigation measures set forth in the EMP; and (iii) implement any corrective or preventative actions set out in safeguards monitoring reports that PMU and PIU will prepare from time to time to monitor implementation of this IEE and EMP. The contractor shall allocate a budget for compliance with these EMP measures, requirements and actions.

A. Responsibilities for EMP Implementation:

75. The following agencies will be responsible for EMP Implementation:

- Department of Tourism, Govt. of Punjab is the Executing Agency (EA) responsible for overall management, coordination, and execution of all activities funded under the loan;
- Punjab Heritage and Tourism Promotion board (PHTPB) including PIUs, will be the Implementing Agency (IA) responsible for coordinating procurement and construction of the project. PIU through its Project Management Unit (PMU) at Chandigarh will be implementing the project;
- The Project Management Consultant (PMC) assists PMU in managing the project including procurement and assures technical quality of design and construction;
- The Design and Supervision Consultant (DSC) will prepare the DPR of the project and will carry out construction supervision during project implementation. Their responsibility will also include EMP implementation/supervision;
- A Project Implementation Unit (PIU) is established in Rupnagar. This PIU will look into progress and coordination of day to day construction works with the assistance of DSC; and
- The contractor will be responsible for execution of all construction works. The contractor will work under the guidance of the PIU, Rupnagar and DSC. The environmental related mitigation measures will also be implemented by the contractor.

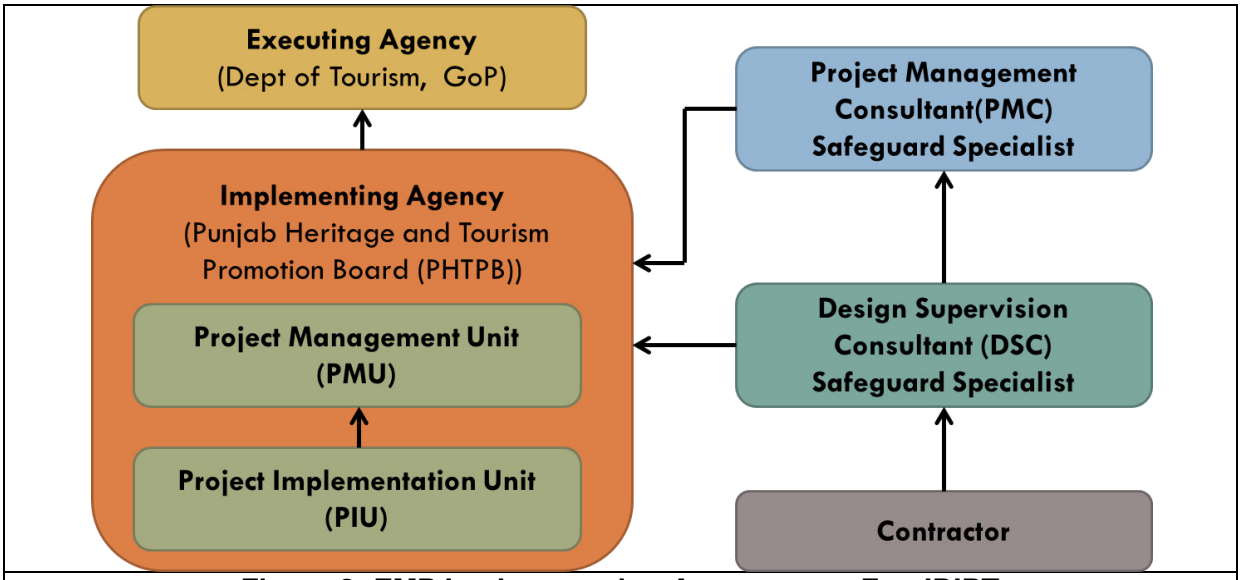

Figure 3: EMP Implementation Arrangement For IDIPT

76. The contractor's conformity with contract procedures and specifications during construction will be carefully monitored by the PIU. Safeguard Specialists are deputed in DSC, PMC and PMU, who will monitor the environmental performance of contractors.

B. EMP Table

77. As per this subproject requirement, environmental management plan have been prepared for the project activities that are likely to have environmental impacts/ issues (**Table 12**) with appropriate mitigation measures

Table 12: Environmental Management Plan

Sl. No.	Project Activity	Potential Impact	Mitigation Measures	Responsible for Implementation	Responsible for Supervision	Frequency of monitoring
Pre-Construction Phase						
1.	Approvals/ NOC Licences and Permits/Labour Insurance	Illegal activity	• All necessary approvals, permits and licences required by the state and local legislation shall be obtained prior to commencing of the construction activity. • All approvals, permits and licences shall be maintained and up dated before expiry, and complied with during the construction period. • Should there be any changes to the project which would require additional permits or licences, these shall be obtained. • NoC from the asset owner (Department of Cultural Affairs, Archaeology and Museums) have been obtained and enclosed in **Annexure 3** • The Contractor shall maintain Pollution under Control (PUC's) Certificates for the construction vehicles and machineries used for this project. • Contractors shall insure all workers covered under the group insurance or any other suitable insurance schemes against all forms of injuries sustained at the workplace.	• Contractor shall obtain all necessary NOC licences and permits, clearances etc. required to carry out the construction activities.	• DSC/ and PIU • Labour/Work permit license, Group Insurance for labourers and PUC for Vehicles and Machineries	Prior to start of construction activity and at regular intervals mainly on licenses/ permits renewal time.
Construction Phase						
2.	Waste generation	Waste generation during Construction activity	• Recycled materials shall be used to the limits of the design. • Any construction waste generated from the construction site shall be contained	Contractor	DSC and PIU	• Daily inspection by contractor • Weekly visual

Sl. No.	Project Activity	Potential Impact	Mitigation Measures	Responsible for Implementation	Responsible for Supervision	Frequency of monitoring
			within the boundary of the site and removed at regular intervals to an appropriate waste disposal or recycling facility, according to the Municipal Council's (MC) norms and procedure. • The worksite shall be left in a tidy and rubbish free state upon completion of the works. • Cover construction debris and waste prior to disposal. • There should be no burning of waste. • The Municipal Solid Waste (MSW) generated at the construction and labour camp (if any) shall be separated as organic and inorganic wastes. • Preparing and implementing a waste management plan for the construction site • Segregating solid and liquid waste before disposal. • Following the instructions of the Environmental Safeguard Specialist (DSC) for designated disposal sites.			inspection by DSC • Random inspection by PMC & PMU
3.	Air pollution	Dust during cleaning works	• Adequate ventilation should be given to the proposed area (rooms for development into arts and craft centre) in order to remove carbonyl smell. • Adequate moisture should be maintained to avoid dust emission. • Labourers' need to use masks and safety gears. • Water needs to be sprinkled on work areas.	Contractor	DSC and PIU	• Daily inspection by contractor • Weekly visual inspection by DSC • Random inspection by PMC & PMU

Sl. No.	Project Activity	Potential Impact	Mitigation Measures	Responsible for Implementation	Responsible for Supervision	Frequency of monitoring
4.		Painting Works	• Comply with safety measures during painting works. • Construction material should be mixed in an enclosed space. • Use paints having less Volatile Organic Compounds (VOC's)			
5.		Burning of waste	• Open burning of construction waste materials should be avoided at the site.			
6.		Movement of Vehicle and Equipment's	• Construction materials should be covered during transportation and delivery • All vehicles used by the Contractor will have copies of valid Pollution under Control (PUC) Certificates as on date as per the requirement of the Punjab Transport Department for the entire duration of the Contract.			
7.		Storage of maintenance materials	• Proper stockpiling (chemicals, paints, electric equipment's etc.) as necessary			
8.		Ambient Air Quality monitoring has to be performed as per the Environmental Monitoring Program	• Particulate matter (PM_{10} & $PM_{2.5}$), SOx, NOx, CO			
9.	Pressure on utility service (water, electricity etc)	Use of water and power	• Efficient use of water and electricity during construction.	Contractor	DSC and PIU	• Daily inspection by contractor • Weekly visual inspection by DSC • Random

Sl. No.	Project Activity	Potential Impact	Mitigation Measures	Responsible for Implementation	Responsible for Supervision	Frequency of monitoring
						inspection by PMC & PMU
10.	Water Pollution	Construction camp	• Minimum distance of 500 m from water bodies (river, stream, lake and ponds) shall be maintained.	Contractor	DSC and PIU	• Daily inspection by contractor • Weekly visual inspection by DSC • Random inspection by PMC & PMU
11.			• Locate facilities in areas that would not be affected by flooding and clear of any natural or storm water courses.			
12.			• Vehicle parking areas, warehouses and workshop locations must have impervious flooring to prevent seepage of any solvents, paints, leaked oil & grease into the ground. The area should be covered with a roof to prevent the entry of rainwater.			
13.	Noise Pollution	Construction vehicle movement	• All construction vehicles and machineries will strictly conform to the CPCB noise standards.	Contractor	DSC and PIU	• Daily inspection by contractor • Weekly visual inspection by DSC • Random inspection by PMC & PMU
14.		Use of machineries	• Using equipment which has sound abating devices. • Using padding for big windows to fill the gaps in order to avoid noise and vibration • Comply with the time and noise limits specified in the Noise Standard (CPCB)			
15.		Ambient Noise levels have to be monitored as per the Environmental Monitoring Program	• Day time dB(A)			
16.	Land Pollution	Spillage from equipment/ vehicles at	• Provision of impervious platform and oil & grease trap for collection of spillage from construction equipment vehicle	Contractor	DSC and PIU	• Daily inspection by contractor

Sl. No.	Project Activity	Potential Impact	Mitigation Measures	Responsible for Implementation	Responsible for Supervision	Frequency of monitoring
		construction camp	maintenance platform.			• Weekly visual inspection by DSC • Random inspection by PMC & PMU
17.		Domestic solid waste and liquid waste generated at camp	• Collecting organic waste at separate bins and disposing of in a pit at designated areas • Collecting inorganic wastes in separate bins and storing them in a secure area within the camp location, and disposal of the same in the nearest municipal solid waste site.			
18.	Fire safety plan and fire fighting	Project construction	• Contractor should have fire prevention plan and designated location plan for provision of fire extinguishing tools and equipment. • The contractor should give training for the workers on using fire extinguisher and conduct mock drills for emergency preparedness. • The Contractor should ensure that an access for emergency exit is provided. • Design alarm system, fire protection system and emergency exits shall be provided if not available.	Contractor	DSC and PIU	• Daily inspection by contractor • Weekly visual inspection by DSC • Random inspection by PMC & PMU
19.	Hazardous material	Project construction	• The contractor should comply with the Hazardous rules, 2008 in disposal of hazardous construction materials including paints, solvents, restoration and renovation chemicals, etc.	Contractor	DSC and PIU	• Daily inspection by contractor • Weekly visual inspection by DSC • Random inspection by PMC & PMU
20.	Occupational health and	Exposure to noise level and	• Provision of water supply, sanitation, drainage and medical health facilities at	Contractor	DSC and PIU	• Daily inspection by

Sl. No.	Project Activity	Potential Impact	Mitigation Measures	Responsible for Implementation	Responsible for Supervision	Frequency of monitoring
	safety of workers	inadequate facilities including supply of potable water and sanitation facilities	campsite • Provision of and as well as ensuring the usage of PPEs (Personal Protective Equipment's) • Provision of earth link circuit breaker (ELCB) for all electrical connections • Provision of first aid boxes and facilities for first aid at construction sites			contractor • Weekly visual inspection by DSC • Random inspection by PMC & PMU
21.	Cooking and heating with firewood by construction workers.	Deforestation	• Contractor shall supply kerosene or LPG at camps and restrict cooking and heating using firewood.	Contractor	DSC and PIU	Daily / weekly inspection
22.	Quality and safety of construction materials	Project construction	• The contractor should procure construction materials from certified suppliers	Contractor	DSC and PIU	• Daily inspection by contractor • Weekly visual inspection by DSC • Random inspection by PMC & PMU
23.	Accidents and safety	Arrangement of traffic during construction	• Provision as well as maintaining the traffic management system comprising of diversion; warning, guiding and regulatory signage's; provision of dust control system etc. as specified in the contract	Contractor	DSC and PIU	• Daily inspection by contractor • Weekly visual inspection by DSC • Random inspection by PMC & PMU
Operation Phase						
24.	Maintenance of	Damages to the	• Maintenance activities that needs to be	Contractor	DSC and PIU	Monthly

Sl. No.	Project Activity	Potential Impact	Mitigation Measures	Responsible for Implementation	Responsible for Supervision	Frequency of monitoring
	the infrastructure facilities	Arts and Craft Centre due to inadequate maintenance.	carried out by PMU as and when required. • Maintenance registers to be maintained.	(during DLP). PMU (after contractor DLP)	(during contractor DLP) PMU (after DLP)	Inspection

VII. INFORMATION DISCLOSURE, CONSULTATION AND PARTICIPATION

A. ADB Disclosure Policy

78. Public consultation was undertaken as per ADB SPS requirements (Refer **Annexure – 8**). All the five principles of information dissemination, information solicitation, integration, coordination and engagement into dialogue were incorporated during the task. A framework of different environmental impacts that are likely from the project was prepared based on opinions of all those consulted, especially with the local people and other stakeholders (artisans). As per the ADB safeguard requirement, public consultation is to be carried out before and after impact identification. Public consultation was therefore carried out twice, once at the time of start of work with the key stakeholders and secondly to discuss mitigating measures and to get concurrence of stakeholders.

B. Process for Consultation followed

79. During the project preparation, stakeholders consultations have been held with the Department of Tourism (DoT), Punjab Heritage and Tourism Promotion Board (PHTPB), Municipal Councils, NGOs and tourists on addressing the current gaps in provision of basic services and improvement of tourist infrastructure. Public consultations were conducted at the site using formal and informal approach. The outcome of the consultation has been recorded and enclosed in **Annexure 11**.carried out included discussions with the officials of the PHTPB and the various contractors involved in the conservation works in the state. These consultations enabled an understanding of the various ongoing conservation works in the state of Punjab being carried out by the PHTPB, materials, specifications followed and the conservation techniques adopted.

C. Plan for Continued Public Participation

80. To ensure continued public participation, provisions to ensure regular and continued stakeholder participation, at all stages during the project design and implementation is proposed. A grievance redressal cell will be set up within the PIU to register grievances of the people regarding technical, social and environmental aspects. This participatory process will ensure that all views of the people are adequately reviewed and suitably incorporated in the design and implementation process. Further, to ensure an effective disclosure of the project proposals to the stakeholders and the communities in the vicinity of the subproject locations, an extensive project awareness campaigns will be carried out.

81. For the benefit of the community the Summary of IEE will be translated in the local language (Punjabi) and made available at the Office of the PMU and Office of the District Commissioner, Chandigarh and Deputy Commissioner, Sangrur. These copies will be made available free of cost to any person seeking information on the same. Hard copies of the IEE will be available in the PMU/PIU as well as the district library at Amritsar and accessible to citizens as a means to disclose the document and at the same time creating wider public awareness. On demand, the person seeking information can obtain a hard copy of the complete IEE document at the cost of photocopy from the office of the PMU/PIU on a written request and payment for the same to the Project Director (PD). Electronic version of the IEE will be placed in the official website of the Tourism Department and the website of ADB after approval of the documents by Government and ADB. The PMU will issue notification on the disclosure mechanism in local newspapers, ahead of the initiation of implementation of the project, providing information on the project, as well as the start dates etc. The notice will be issued by the PMU in local newspapers one month ahead of the implementation works. This will create awareness of the project implementation among the public. Posters designed to mass campaign the basic tenets of the IEE will be distributed to libraries in different localities that will generate mass awareness.

VIII. GRIEVANCE REDRESS MECHANISM

82. The affected person/aggrieved party can give their grievance verbally or in written to the local grievances committee. Grievances of affected person will first be brought to the attention of the PIU who can resolve the issue at site level. If the matter is not solved within 7 days period by the PIU, it will be brought to the Grievance Redress Committee constituted for the purpose in PIU. This GRC shall discuss the issue in its monthly meeting and resolve the issues within one month of time after receiving the grievance. If the matter is not resolved by GRC at PIU level within stipulated time, it shall be referred to GRC at PMU level by Executive Engineer of PIU.

83. GRC at PMU shall discuss the issue and try to resolve it and inform the PIU accordingly. If the matter is not resolved by the GRC at PMU level within one month of time, the aggrieved person/party can bring the matter to The Court of Law. The PIU shall keep records of all grievances received including contact details of complainant, date of receiving the complaint, nature of grievance, agreed corrective actions and the date these were affected and final outcome. The grievance redress process is shown below.

A. Composition and Functions of GRC

84. Local Grievance Committee (LGC). In this LGC shall work with NGO, SHG, Line Agency, representative of Gram Panchayat, Special invitee.

85. **First Level Grievance Redress Committee (GRC) at PIU.** In each PIU there shall be one GRC, which will include Project Manager (PIU), District Tourist Officer of Department of Tourism of Govt. of Punjab, Community Development Officer of PIU, nominated representative of District Magistrate and other concerned nominated representatives. The committee shall be headed by Project Manager (PIU). PIU can associate NGO as per his decision. The committee will meet at least once in every month. Agenda of meeting shall be circulated to all the members and affected persons/aggrieved party along with venue, date and time; informed in written at least 7 days in advance of meeting. The matters shall remain with GRC at PIU level for 15 days and if grievance is not resolved within this time period, the matter shall be referred to GRC at PMU.

86. **Second Level Grievance Redress Committee (GRC) at PMU.** There shall be one GRC in PMU. The matters not resolved by the GRC at PIU level within 15 days shall come under GRC at PMU. GRC at PMU will include Community Development Expert of PMU, Safeguard Specialist of PMU and Additional Project Director (APD) of PMU. The Committee shall be headed by APD of PMU. This committee shall look into the matters, which are referred to and not resolved by GRC at PIU level. GRC at PMU will resolve the issue within one month.

87. **Third Level Grievance Redress Committee (GRC) at SLEC.** If the matter is not resolved by the GRC at PMU level within one month's time, the aggrieved person/party can bring the matter to The Executive Committee/State Level Empowered Committee (SLEC).

B. Approach to GRC

88. Affected person/aggrieved party can approach to GRC for redress of his/their grievances through any of the following modes:

- Through **Grievance Redress Form**: Aggrieved person/party can give their grievance in Grievance Redress Form available at PIU and PMU. Sample Grievance Redress Form is attached as **Annexure 4**
- **Web based**: A separate corner will be developed at the program website so that public / community/ affected person can register their complaint in the online column.
- **Telecom based**: A toll free no. Will be issued by the PMU/ PIU so that general public can register their complaint through telephone / mobile phone to the PIU/PMU office.

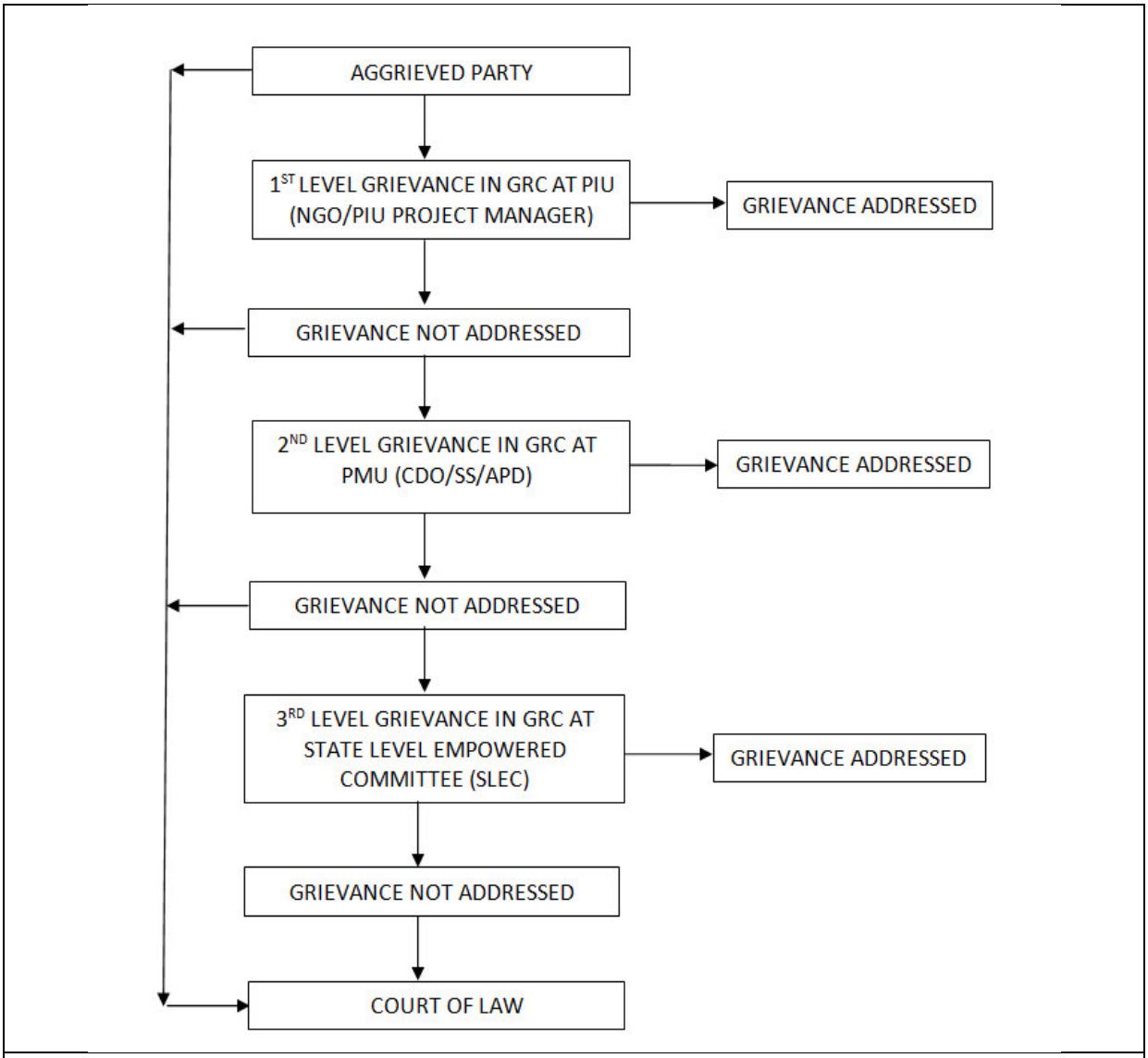

Figure 4: Grievance Redress Mechanism in IDIPT, Punjab

Note: LGC -NGO, SHG, Line Agency, Representative of Gram Panchayat, Special invitee GRC – PM, CDO, Engineer, DFO, DTO, SDM GRC in Environment and Social Management Cell (ESMC) –PMU (APD, SS, CDS, FS), PMC (EE, CDE)

IX. ENVIRONMENTAL MONITORING PROGRAM

89. The proposed subproject on the conservation work does not have any impacts to the environment. However, in order to have a close look at the existing environment during the construction activity, a monitoring plan (**Table 13**) has been framed for construction phase.

90. The PIU and DSC will be responsible for performing environmental monitoring through the Contractor and they will be supervised by the PMU and PMC. The PIU with support from the DSC will submit quarterly and semi-annual monitoring reports (**Annexure 5** to **7**) to the PMU. The PMU will consolidate the quarterly and semi-annual monitoring reports with assistance from PMC and will send it to ADB. ADB after approval will post the environmental monitoring reports on its website.

Table 13: Environmental Monitoring Plan

Sl No	Attributes	Stage	Parameters to be Monitored	Location	Frequency	Standard / Guidelines	Responsibility
1	Air Quality in the Surrounding	Pre-construction (before commencement of civil works)	SO_2, NO_2, PM_{10}, $PM_{2.5}$	At two locations: (I) Residential / commercial area (120° from the construction site) (ii) Periphery of the proposed subproject site	Once during pre-construction stage	As per PPCB/ CPCB guidelines	Contractor (Through approved Environmental Monitoring Agency)
2	Air Quality at Construction Camp	Construction Stage	SO_2, NO_2, PM_{10}, $PM_{2.5}$	At construction camp (two locations), samples shall be collected during construction	Once in a season (except monsoons) for the entire construction stage	As per PPCB/ CPCB guidelines	Contractor (Through approved Environmental Monitoring Agency)
3	Noise Level in the Surrounding	Pre-construction (before commencement of civil works)	Equivalent Day & Night Time Noise Levels	At two locations (similar to air quality locations)	Once during pre-construction stage	As per PPCB/ CPCB guidelines	Contractor (Through approved Environmental Monitoring Agency)
4	Noise level at Construction Camp	Construction Stage	Free field at 10 m from the equipment whose noise levels are to be determined.	At construction camp (two locations), samples shall be collected during construction	Once in a season (except monsoons) during construction stage	As per PPCB/ CPCB guidelines	Contractor (Through approved Environmental Monitoring Agency)

X. CAPACITY BUILDING

91. The Environmental Specialist of the PMC will provide the basic training required for environmental awareness followed by specific aspects of infrastructure improvement Projects along with Environmental implications for projects located within / in the vicinity of natural and cultural heritage sites. Specific modules customized for the available skill set will be devised after assessing the capabilities of the members of the Training Programme and the requirements of the project.

92. The entire training would cover basic principles of environmental assessment and management; mitigation plans and programmes, implementation techniques, monitoring methods and tools. The proposed training program along with the frequency of sessions for the Punjab Sikh heritage Route destination is presented in **Table 14** below :

Table 14: Training Modules for Environmental Management

Programme	Description	Participants	Form of Training	Duration/ Location	Training Conducting Agency
A. Pre-Construction Stage					
Sensitization Workshop	Introduction to Environment: Basic Concept of environment Environmental Regulations and Statutory requirements as per	Tourism / Forest / Roads / Culture Department Officials, Project Director (PD) and	Workshop	½ Working Day	Safeguard Specialist of the PMC

Programme	Description	Participants	Form of Training	Duration/ Location	Training Conducting Agency
	Government of India and ADB	Environmental safeguard Specialist (ESS) of the PMU			
Session I					
Module I	Introduction to Environment: Basic Concept of environment Safeguards Regulations and Statutory requirements as per Government of India and ADB Guidelines on cultural resources, Environmental considerations in planning, design and implementing projects	PMU/PIU (including the ESS) and Engineering staff of the implementing agencies	Lecture	1Working Day	Safeguards Specialist of the PMC
Module II	Environmental components impacted in construction and operation stages Activities causing pollution during construction and operation stages Environmental Management Environmental Provisions Implementation Arrangements Methodology of Assessment Good engineering practices to be integrated into contract documents	PMU/PIU (including the ESS) and Engineering staff of Tourism dept.	Workshop	¼ Working Day	Safeguards Specialist of the PMC
Module III	Environmental considerations in planning, designing and implementing heritage buildings and conservation projects	PMU/PIU (including the ESS) and Engineering staff of Tourism dept.	Lecture / Interactive Sessions and site visits	2 working days	Safeguards specialist of the PMC with support from the International Conservation specialist of the PMC
Module IV	Improved Co-ordination with other Departments: Statutory Permissions – Procedural Requirements Co-operation & Co-ordination with other Departments.	PMU/PIU (including the ESS) and Engineering staff of Tourism dept.	Lecture / Interactive Sessions	1Working Day	Safeguards Specialist of the PMC
B. Construction Stage					
Session II					
Module V	Role during Construction Roles and Responsibilities of officials/ contractors/	Engineers and staff of line depts. of GoP,	Lecture / Interactive Sessions	½ Working Day	Safeguards Specialist of the PMC

Programme	Description	Participants	Form of Training	Duration/ Location	Training Conducting Agency
	consultants towards protection of environment Implementation Arrangements Monitoring mechanisms	and PMU/PIU (including the ESS)			
Module VI	Monitoring and Reporting System	Engineers and staff of implementing agencies , and PMU/PIU (including the ESS)	Lecture / Interactive Sessions	½ Working Day	Safeguards Specialist of the PMC

XI. EMP IMPLEMENTATION COST

93. From the construction activities point of view, it is relatively a minor construction project and hence it is not expected to cause air, water and noise pollution. However as per the environmental monitoring plan suggested for this subproject, provisions had been given in the EMP budget for conducting ambient air and noise quality monitoring.

94. The costs of water sprinkling for dust suppression and providing personal protective equipment's to construction workers shall be borne by contractor as part of conditions of contract. In addition, the sources of funds for mitigation measures during construction stage including monitoring during construction stage are also to be borne by the contractor. These are deemed to be included as part of the contract price amount quoted by the contractor for the works. The costs of components for monitoring in operation stage and the capacity building costs are to be funded by the PMU. The EMP cost is given in the **Table 15** below:

Table 15: Environmental Budget

Sl. No.	Particulars	Stages	Unit	Total number	Rate (INR)	Cost (INR)
A	**Monitoring Measures**					
1	Air Quality in the surroundings	Pre - Construction	Per sample	2	10000	20,000.00
2	Air Quality at Construction Camp	Construction	Per sample	10	10000	100,000.00
3	Noise Level in the surroundings	Pre - Construction	Per sample	2	4000	8,000.00
4	Noise Level at Construction Camp	Construction	Per sample	10	4000	40,000.00
	Sub -Total (A)					**1,68,000.00**
B	**Capacity Building**	(includes cost estimates for the entire circuit, and not included in the package costs)				
1	Sensitization Workshop	Pre-Construction	Lump sum			1,50,000.00
2	Training Session I (Environmental Safeguard)	Pre-Construction	Lump sum			1,50,000.00
3	Training Session II (Social Safeguard)	Pre-Construction	Lump sum			1,50,000.00
	Sub-Total (B)					**4,50,000.00**
	Grand Total					**6,18,000.00**

XII. FINDINGS AND RECOMMENDATIONS

95. As per the EIA notification September 2006 and amendment 2009, the proposed sub project on "**State-Level Art and Craft Resource Centres at Chandigarh and Sangrur Kothi**" does not require any form of Environmental Clearance. Obtaining Consent to Establish (NOC) from the Punjab Pollution Control Board is not mandatory; this is due to the non-usage of the heavy construction equipment's/ machineries. However, if the Contractor is using a DG set, then they should obtain NOC from PPCB, which is mandatory.

96. The proposed subproject is planned to be developed in the existing buildings located at Archives Bhawan, Chandigarh and Diwan Khana complex, Sangrur. Both the buildings are owned by the Director, Department of Cultural Affairs, Archaeology & Museums, Govt. of Punjab, Chandigarh. Hence, the land acquisition and R&R issues are not envisaged. There are no significant environmental impacts at any stage of the project. However, few constructions related impacts at the site might arise, if not properly managed. For the identified construction impacts, a separate Environmental management Plan (EMP) is suggested in the **Table 12**. The effective implementation of the proposed measures will be ensured through capacity building of the environmental management team within the PMU which will be supplemented with the technical expertise of an Environmental Safeguard Specialist as part of the DSC.

XIII. CONCLUSIONS

97. Based on the environmental assessment carried out for this project, it shall be concluded that this project does not have any impact on the environment and social (land acquisition and Resettlement and Rehabilitation) issues. Few construction related impacts are anticipated, however, it will be mitigated through the mitigation measures proposed in this report. Hence, implementation of this project will have a positive impact on the local tourism and locals by way of increased business/ employment opportunities.

Annexure - 1

Rapid Environmental Assessment (REA) Checklist

URBAN DEVELOPMENT

Instructions:

(i) The project team completes this checklist to support the environmental classification of a project. It is to be attached to the environmental categorization form and submitted to the Environment and Safeguards Division (RSES), for endorsement by Director, RSES and for approval by the Chief Compliance Officer.

(ii) This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer also to ADB's (a) checklists on involuntary resettlement and Indigenous Peoples; (b) poverty reduction handbook; (c) staff guide to consultation and participation; and (d) gender checklists.

(iii) Answer the questions assuming the "without mitigation" case. The purpose is to identify potential impacts. Use the "remarks" section to discuss any anticipated mitigation measures.

Country/ Project Title: **IDIPT: State-Level Art and Craft Resource Centres at Chandigarh and Sangrur Kothi (Package no: PB/IDIPT/T3/02/17)**

Sector Division: **Urban Development**

Screening Questions	Yes	No	Remarks
A. Project Siting It is Project area adjacent to or within any of the following environmentally sensitive areas?			
▪ Cultural heritage site	✓		The project location at Sangrur Kothi is a cultural and heritage site
▪ Protected Area		✓	There is no protected area within or in the vicinity of the subproject area
▪ Wetland		✓	There is no wetland within or in the vicinity of the subproject area
▪ Mangrove		✓	There is no mangrove within or in the vicinity of the subproject area
▪ Estuarine		✓	Not applicable
▪ Buffer zone of protected area		✓	Not applicable
▪ Special area for protecting biodiversity		✓	Not applicable
B. Potential Environmental Impacts Will the Project cause...			
▪ Encroachment on historical/cultural areas; disfiguration of landscape by road embankments, cuts, fills, and quarries?		✓	The subproject sites belong to Government of Punjab and it is free from encroachment
▪ Encroachment on precious ecology (e.g. sensitive or protected areas)?		✓	Not envisaged as there are no protected or sensitive areas near or within the proposed sites
▪ Alteration of surface water hydrology of waterways crossed by roads, resulting in increased sediment in streams affected by increased soil erosion at construction site?		✓	Not envisaged as there are no water bodies surrounding the subproject areas
▪ Deterioration of surface water quality due to silt runoff and sanitary wastes from worker-based camps and chemicals		✓	Not envisaged as there are no water bodies surrounding the subproject areas

Screening Questions	Yes	No	Remarks
used in construction?			
▪ Increased local air pollution due to rock crushing, cutting and filling works, and chemicals from asphalt processing?		✓	No such works are proposed
▪ Risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation?		✓	Not envisaged
▪ Noise and vibration due to blasting and other civil works?		✓	blasting operations are not required
▪ Dislocation or involuntary resettlement of people?		✓	Not envisaged
▪ Dislocation and compulsory resettlement of people living in right-of- way?		✓	Not envisaged
▪ Disproportionate impacts on the poor, women and children indigenous peoples or other vulnerable groups?		✓	Not envisaged
▪ Other social concerns relating to inconveniences in living conditions in the project areas that may trigger cases of upper respiratory problems and stress?		✓	Not envisaged
▪ Hazardous driving condition where construction interferes with pre-existing roads?		✓	Not envisaged
▪ Poor sanitation and solid waste disposal in construction camps and work sites, and possible transmission of communicable diseases (such as STI's and HIV/AIDS) from workers to local populations?		✓	Not envisaged, as the labour force required for this subproject implementation is very less and hence local labourers shall be deployed
▪ Creation of temporary breeding habitats for disease such as those transmitted by mosquitoes and rodents?		✓	Not envisaged
▪ Accident risks associated with increased vehicular traffic, leading to accidental spills of toxic materials?		✓	Not envisaged
▪ Increase noise and air pollution resulting from traffic volume?		✓	Not envisaged
▪ Increase risk of water pollution from oil, grease and fuel spills, and other materials from vehicles using the road?		✓	Not envisaged
▪ Social conflicts if workers from other region of countries are hired?		✓	Not envisaged, as the labour force required for this subproject implementation is very less and hence local labourers shall be deployed
▪ Large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)?		✓	Not envisaged, as the labour force required for this subproject implementation is very less and hence local labourers shall be deployed
▪ Risks to community health and safety due to the transport, storage, and use and /or disposal of materials such as explosives, fuel and other chemicals during construction and operation?		✓	No such materials are required which may create community health and safety risks
▪ Community safety risks due to both accidental and natural causes, especially		✓	Not envisaged

Screening Questions	Yes	No	Remarks
where the structural elements or components of the project are accessible to members of the affected community or where the failure could result in injury to the community throughout project construction, operation and decommissioning.			

PRELIMINARY CLIMATE RISK SCREENING CHECKLIST FOR SAMPLE SUBPROJECT TOWNS

Country/Project Title: State-Level Art and Craft Resource Centres at Chandigarh and Sangrur Kothi (Package no: PB/IDIPT/T3/02/17)
Sector: Urban Development
Subsector:
Division/Department:

Screening Questions		Score	Remarks[2]
Location and Design of project	Is siting and/or routing of the project (or its components) likely to be affected by climate conditions including extreme weather related events such as floods, droughts, storms, landslides?	0	The proposed subprojects are planned at Sangrur and Chandigarh. The subproject areas does not fall under extreme weather conditions
	Will the project design (e.g. the clearance for bridges) need to consider any hydro-meteorological parameters (e.g., sea-level, peak river flow, reliable water level, peak wind speed etc)?	0	Does not arise
Materials and Maintenance	Will weather, current and likely future climate conditions (e.g. prevailing humidity level, temperature contrast between hot summer days and cold winter days, exposure to wind and humidity, and hydro-meteorological parameters) affect the selection of project inputs over the life of project outputs (e.g. construction material)?	0	The construction materials proposed to be used for this sub project does not have any impact on the climate
	Will weather, current and likely future climate conditions, and related extreme events likely affect the maintenance (scheduling and cost) of project output(s)?	0	Does not arise
Performance of project outputs	Will weather/climate conditions and related extreme events likely affect the performance (e.g. annual power production) of project output(s) (e.g. hydro-power generation facilities) throughout their design life time?	0	Does not arise

Options for answers and corresponding score are provided below:

Response	Score
Not Likely	0
Likely	1
Very Likely	2

Responses when added that provide a score of 0 will be considered <u>low risk</u> project. If adding all responses will result to a score of 1-4 and that no score of 2 was given to any single response, the project will be assigned a <u>medium risk</u> category. A total score of 5 or more (which include providing a score of 1 in all responses) or a 2 in any single response will be categorized as <u>high risk</u> project.

[2]If possible, provide details on the sensitivity of project components to climate conditions, such as how climate parameters are considered in design standards for infrastructure components, how changes in key climate parameters and sea level might affect the siting/routing of project, the selection of construction material and/or scheduling, performances and/or the maintenance cost/scheduling of project outputs.

Result of Initial Screening (Low, Medium, High): Low

Other Comments: The proposed subproject activity involves conservation of Kothi, causeway and courtyard, landscaping, Interior works, toilet blocks, services (electrical and lighting, central heating ventilation and air-conditioning (HVAC), security, fire detection and plumbing), Illumination of the complex and Rainwater harvesting pit. Hence the anticipated environmental impacts are very marginal and the construction activities does not impose any threat to the existing climatic conditions.

Prepared by: Department of Tourism, Punjab

Annexure - 2

PROJECT AREA

Archives Bhawan, Chandigarh

Diwan Khana Complex, Sangrur

Annexure- 3

No Objection Certificates (NoC) from Asset Owners

CERTIFICATE AND UNDERTAKING

It is certified that: -

1. The DIWAN KHANA, SANGRUR (details of land/area/ building) Where the KOTHI (OFFICER'S) QUATERS (name of the project) project is proposed, for execution by PHTPB of the Tourism Department (Punjab), is under the ownership of DEPT. OF CULTURE (Details of the owner) and is under the possession of Dept of Cultural Affairs (Details of possessor)

2. There is NO encroachment and NO resettlement/displacement/rehabilitation of people involved in the above Proposed Project area/building/land.

3. The proposed Project is not Partially/Fully part of any other project funded under any other scheme/programme of the State/Central Govt. or any external funding.

4. The assets created as a result of the execution of above stated project will be taken over for operation and maintenance by (Name of the department/organization) Dept of Cultural Affairs

Place: Chandigarh
Date: 27/8/14

Signature
Department/Organisation/Owner
(Official Stamp)

Counter Signed
Deputy Commissioner
(SANGRUR)

Cultral Affairs Archaeology & Museums, Punjab, Chandigarh

NO OBJECTION CERTIFICATE

It is certified that there is no objection if the proposed project .....

KOTHI (OFFICER'S QUATERS)
(name of the project)

is executed by PHTPB of the Tourism Department (Punjab) as per the guide lines of Govt. of India and ADB loan funded projects under IDIPT at .....

DIWAN KHANA, SANGRUR
(details of land/area/ building)

.....

Place: Chandigarh
Date: 27/8/14

Signature .....
Department /owner

(Official Stamp)

Director,
Cultral Affairs Archaeology & Museums, Punjab, Chandigarh

Counter Signed

30/8/14

Deputy Commissioner

Deputy Commissioner
SANGRUR

CERTIFICATE AND UNDERTAKING

It is certified that: -

1. The Archives Bhawan, Plot No. 2, Sector 32A Chandigarh
(details of land/area/ building)
..... Where
the Development of Craft Outlet and Tourist Reception Centre,
(name of the project)
..... project is proposed, for execution by PHTPB of the Tourism Department (Punjab), is under the ownership of DEPARTMENT OF CULTURAL AFFAIRS, ARCHAEOLOGY AND MUSEUMS and is under the possession of DEPARTMENT OF CULTURAL AFFAIRS, ARCHAEOLOGY AND MUSEUMS.

2. There is NO encroachment and NO resettlement/displacement/rehabilitation of people involved in the above Proposed Project area/building/land.

3. The proposed Project is not Partially/Fully part of any other project funded under any other scheme/programme of the State/Central Govt. or any external funding.

4. The assets created as a result of the execution of above stated project will be taken over for operation and maintenance by DEPARTMENT OF CULTURAL AFFAIRS, ARCHAEOLOGY AND MUSEUMS

Place:

Date:

Signature .....

Department/Organisation/Owner

(Official Stamp)

Counter Signed

Deputy Commissioner

(Official Stamp)

NO OBJECTION CERTIFICATE

It is certified that there is no objection if the proposed project .....

Development of Craft Outlet & Tourist Reception Center
(name of the project)

is executed by PHTPB of the Tourism Department (Punjab) as per the guide lines of Govt. of India and ADB loan funded projects under IDIPT at Archives Bhawan

Plot No 3, Sector 38A, Chandigarh
(details of land/area/ building)

.....

Place: CHANDIGARH

Date:

Signature .....
Department /owner

(Official Stamp)

Counter Signed

Deputy Commissioner

(Official Stamp)

Annexure-4

Sample Grievance Redress Form
(To be available in Local Language and English)

The _____Project welcomes complaints, suggestions, queries and comments regarding project implementation. We encourage persons with grievance to provide their name and contact information to enable us to get in touch with you for clarification and feedback. Should you choose to include your personal details but want that information to remain confidential, please inform us by writing/typing *(CONFIDENTIAL)* above your name. Thank you.

Date		**Place of registration**			
Contact Information/Personal Details					
Name		**Gender**	* Male * Female	**Age**	
Home Address					
Place					
Phone no.					
E-mail					
Complaint/Suggestion/Comment/Question Please provide the details (who, what, where and how) of your grievance below: If included as attachment/note/letter, please tick here:					
How do you want us to reach you for feedback or update on your comment/grievance?					

FOR OFFICIAL USE ONLY

Registered by: (Name of Official registering grievance)	
Mode of communication: Note/Letter E-mail Verbal/Telephonic	
Reviewed by: (Names/Positions of Official(s) reviewing grievance)	
Action Taken:	
Whether Action Taken Disclosed:	Yes No
Means of Disclosure:	

Annexure- 5

Sample Quarterly Environmental Monitoring Report Template

This template must be included as an Annex in the EIA/IEE that will be prepared for the project. It can be adapted to the specific project as necessary.

INTRODUCTION

- Overall project description and objectives
- Description of sub-projects
- Environmental category of the sub-projects
- Details of site personnel and/or consultants responsible for environmental monitoring
- Overall project and sub-project progress and status

No.	Sub-Project Name	Status of Sub-Project				List of Works	Progress of Works
		Design	Pre-Construction	Construction	Operational		
		☐	☐	☐	☐		
		☐	☐	☐	☐		
		☐	☐	☐	☐		

COMPLIANCE STATUS WITH NATIONAL/STATE/LOCAL STATUTORY ENVIRONMENTAL REQUIREMENTS

No.	Sub-Project Name	Statutory Environmental Requirements	Status of Compliance	Action Required

COMPLIANCE STATUS WITH ENVIRONMENTAL LOAN COVENANTS

No. (List schedule and paragraph number of Loan Agreement)	Covenant	Status of Compliance	Action Required

COMPLIANCE STATUS WITH THE ENVIRONMENTAL MANAGEMENT AND MONITORING PLAN

- Provide the monitoring results as per the parameters outlined in the EMP. Append supporting documents where applicable, including Environmental Site Inspection Reports.
- There should be Reporting on the following items which can be incorporated in the checklist of routine Environmental Site Inspection Report followed with a summary in the semi-annual Report send to ADB. Visual assessment and review of relevant site documentation during routine site inspection needs to note and record the following:
- What are the dust suppression techniques followed for site and if any dust was noted to escape the site boundaries;
- If muddy water was escaping site boundaries or muddy tracks were seen on adjacent roads;
- adequacy of type of erosion and sediment control measures installed on site, condition of erosion and sediment control measures including if these were intact following heavy rain;
- Are their designated areas for concrete works, and refuelling;
- Are their spill kits on site and if there are site procedure for handling emergencies;
- Is there any chemical stored on site and what is the storage condition?

- Is there any dewatering activities if yes, where is the water being discharged;
- How are the stockpiles being managed;
- How is solid and liquid waste being handled on site;
- Review of the complaint management system;
- Checking if there are any activities being under taken out of working hours and how that is being managed.

Annexure - 6

Summary Monitoring Table

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring
Design Phase						
Pre-Construction Phase						
Construction Phase						
Operational Phase						

Overall Compliance with CEMP/EMP

No.	Sub-Project Name	EMP/CEMP Part of Contract Documents (Y/N)	CEMP/EMP Being Implemented (Y/N)	Status of Implementation (Excellent/ Satisfactory/ Partially Satisfactory/ Below Satisfactory)	Action Proposed & Additional Measures Required

APPROACH AND METHODOLOGY FOR ENVIRONMENTAL MONITORING OF THE PROJECT

- Brief description on the approach and methodology used for environmental monitoring of each sub-project

MONITORING OF ENVIRONMENTAL IMPACTS ON PROJECT SURROUNDINGS (AMBIENT AIR, WATER QUALITY AND NOISE LEVELS)

- Brief discussion on the basis for monitoring
- Indicate type and location of environmental parameters to be monitored
- Indicate the method of monitoring and equipment to be used
- Provide monitoring results and an analysis of results in relation to baseline data and statutory requirements

As a minimum the results should be presented as per the tables below.

Air Quality Results

Site No.	Date of Testing	Site Location	Parameters (Government Standards)		
			PM_{10} ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	NO_2 ($\mu g/m^3$)

Site No.	Date of Testing	Site Location	Parameters (Monitoring Results)		
			PM_{10} ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	NO_2 ($\mu g/m^3$)

Water Quality Results

Site No.	Date of Sampling	Site Location	Parameters (Government Standards)					
			pH	Conductivity (µS/cm)	BOD (mg/L)	TSS (mg/L	TN (mg/L)	TP (mg/L)

Site No.	Date of Sampling	Site Location	Parameters (Government Standards)					
			pH	Conductivity (µS/cm)	BOD (mg/L)	TSS (mg/L	TN (mg/L)	TP (mg/L)

Noise Quality Results

Site No.	Date of Testing	Site Location	LA_{eq} (dBA) (Government Standard)	
			Day Time	Night Time

Site No.	Date of Testing	Site Location	LA_{eq} (dBA) (Government Standard)	
			Day Time	Night Time

SUMMARY OF KEY ISSUES AND REMEDIAL ACTIONS

- Summary of follow up time-bound actions to be taken within a set timeframe.

Annexes

- Photos
- Summary of consultations
- Copies of environmental clearances and permits
- Sample of environmental site inspection Report
- Other

Annexure -7

SAMPLE ENVIRONMENTAL SITE INSPECTION REPORT

Project Name
Contract Number

NAME: _____ DATE: _____
TITLE: _____ DMA: _____
LOCATION:_____GROUP: _____

WEATHER CONDITION:
_____

INITIAL SITE CONDITION:
_____

CONCLUDING SITE CONDITION:

Satisfactory _____ Unsatisfactory_____ Incident_____ Resolved _____ Unresolved _____

INCIDENT:
Nature of incident:
_____

Intervention Steps:
_____

Incident Issues

Resolution

Project Activity Stage	Survey	
	Design	
	Implementation	
	Pre-Commissioning	
	Guarantee Period	

Inspection

Emissions	Waste Minimization
Air Quality	Reuse and Recycling
Noise pollution	Dust and Litter Control
Hazardous Substances	Trees and Vegetation

Site Restored to Original Condition Yes No ☐

Signature
_____

_____ _____
Name **Position**

ANNEXURE – 8

PUBLIC CONSULTATION

The Public consultation and stakeholder involvement meeting was organised to discuss about the proposed scope of work at Archives Bhawan, Chandigarh and its benefits to the community.

Objective of Public consultation

The overall objective to organize such type of Public Consultation meeting is to give the information about the project and ADBs guidelines to the local people and involve the stakeholders by taking their suggestion so that their suggestions could be taken into consideration during pre-construction, construction and management stage.

Meeting Dated: - 29 September 2016 **Time: -** 12:00pm
Venue: - Gurudwara, Sector 38 B, Chandigarh, Panjab University, Sector 14, Chandigarh, Market Sector 15, Chandigarh, Market Sector 22, Chandigarh

Detailed Discussion:

Public consultation meeting was held at various places near the project area, during the discussion below mentioned information was provided:

- ESS, PMU discussed the purpose of organising the public consultation meeting. She told that there are various ADB assisted projects going on in Punjab under the Punjab Tourism Department. She told in detail about the project components and Asian Development Bank (ADB) guidelines. She also gave information about the purpose behind the construction of the project which is to show the culture and heritage of Punjab to all over the visitors.
- GS, PIU (Ropar) told in detail about the future scope of the project and how can this project be beneficial to the art and craft artisans. She also asked with all that if anybody have the contact number of any artisans. So that we can contact them in future. She told that this project will be a step to promote the culture and craft of Punjab.
- CDO, PIU (Ropar) told the benefits of the project that the visitors are likely to avail in future. The formation of Self Help Groups (SHGs) in the adjoining residential areas will help in training local residents in various traditional crafts. The Centre will invite a wide range of opportunities for the local people that would help them earn valuable benefits.

Suggestions:

- The Gurudwara committee members were enthusiastic about the proposed project and were even willing to donate few antiques and other handicraft items to the Tourism department for display at the Art and Craft Resource centre.
- Panjab University students asked to contact the artisans working in the villages who prepare unique handmade products. This would help the artisans in showcasing their talent by displaying the products at the craft centre and in turn could help them in livelihood income generation and their work would get widely acknowledged.
- Some students of Panjab University gave suggestions that such craft centres should be set up in each district, as it would help local people in having an easy access to the artisans work.
- Some local females suggested that after the construction of craft centre, there must be 50% reservation for the females in the management staff.
- Local residents also suggested in providing details about the craft centre on the website of Punjab Tourism, so that any outsider/tourist can easily access the information and also provide suggestions for its improvement.

Photographs during Public Consultation Meeting

Consultation with Gurudwara committee members at Sector 38

Interaction with local Community at Sector 22

Interaction with Students at Panjab University

Interaction with local people at Sector 38

Interaction with students at Panjab University

Consultation with shop owner at Sector 15

STAKEHOLDER'S CONSULTATION MEETING
ATTENDANCE SHEET

STAGE OF CONSULTATION (PROJECT DESIGN/ IMPLEMENTATION): Project Design

PROJECT AND PACKAGE: State level art and craft resource centers. at Archives bhawan, Chandigarh

NAME OF THE PERSONS WHO MADE CONSULTATION: Ms Vidushi Sharma, ESS, PMU
Ms Sumati Bhaskar, GS, PIU Ropar
Mr Kamaljeet Singh, CDO, PIU Ropar

DESIGNATION:

PROJECT OFFICE: PMU, Chandigarh
PIU, Ropar.

S.No.	Name of the person consulted	Designation of the person consulted	Address of the person consulted	Date	Issues Discussed	Outcome	Signature of the person
1	[illegible]	[illegible]	[illegible]	29-9-16	traditon item to be display in outlet	Agreed to the decision	Tara Sing
2.	[illegible]	[illegible]	0172-2696935	—do—			[illegible]
3.	[illegible]	—do—	—do—	—do—			[illegible]
4.	[illegible]						[illegible]
5	[illegible]		9530716008				[illegible]
6	[illegible]	[illegible]	9417790411	—			[illegible]
7	[illegible] (f)	—	—	—			[illegible]
8-	[illegible]	—	98156-28832	29.9.16			[illegible]
9-	[illegible] (f)	—	—	—			[illegible]
10-	VIVEK	—	—	—			VIVEK
11	Charu Chagti			29-9-16			Charu
12	Bhavi (f)			29-9-16			Bhavi
13	Geetu Sharma (f)			29.9.16			Geetu
14	Priyanka (f)			29.9.16			Priyanka
15	Kavita (f)		750 8888852	29.9.16			Kavita
16	Ram			"			Ram
17	Pranav			"			Pranav
18	Shimanshu		8427600772	29.9.16			Shimanshu
19	Sushil (f)			"			Sushil

List of attendees during Public Consultation Meeting

S.No.	Name of the person consulted	Designation of the person consulted	Address of the person consulted	Date	Issues Discussed	Outcome	Signature of the person
20	Sandeep Kumar	Research Fellow	Boys Hostel No – 5 1/18	29/9/16	Art & handicraft		
21	Anu (F)	Research Fellow	Girls Hostel No. 2	29/9/16	Art/handicraft		
22	Skandan Singh	Research Fellow	B.H.No.7 P.U. Chd.	29/9/16		8288992880	
23	Kamal Goyal	Masters in Music	B.H. no:5 PUCHD	29/9/16			
24	Jagdeep Singh	Music Deptt.		29/9/16	Art/handicraft		
25	Paramjit Kaur (F)		Secretary dept PUChd				
26	Amandeep						
27	Satnam Kaur (F)		Sec 55 Chd				
28	Karamjit Kaur (F)						
29	Nikhil Kumar	Shopkeeper	Sec – 22C	29/9/16		7696701328	
30	PANKAJ GAMBHIR	Shop Owner	Sector-15-D	29/9/16		8699519191	
8?							
31	GURPREET SINGH	(S.M ~~pb~~ PIU ROPAR)		29/9/16		94780-39502	
32	KAMALJEET SINGH	CDO	PIU Ropar	29/9/16		9464258714	
33	Vidushi Sharma (F)	ESS, PMU, Chd.	PMU Chd	29/9/16		8427852111	
34.	Sumati Bhaskar (F)	Gender Specialist	PIU Ropar	29/09/16		9501801562	